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ABSTRACT

This guide, which can be used as a school self-inspection tool, is designed to help Washington's K-12 public schools prevent and reduce injuries and illnesses by focusing on good health and safety practices. The guide also focuses on practices that can be undertaken during the design, construction, renovation, operation, maintenance, or inspection of any school. The main portion of the guide can be used for report documentation, tracking work orders, and creating customized checklists for different users. Safety topics and guidelines include those for plumbing, water supply, and fixtures; sewage disposal; heating and ventilation; temperature and sound control; lighting; food handling; general safety; laboratories and science classrooms; vocational instruction; blood borne pathogens; animals in classrooms; disaster preparedness; and indoor air quality. Appendices provide inspection protocols, agency roles and responsibilities, restricted chemicals in laboratories, inspection protocols, special considerations for art classrooms, references, websites, and related documents. (GR)

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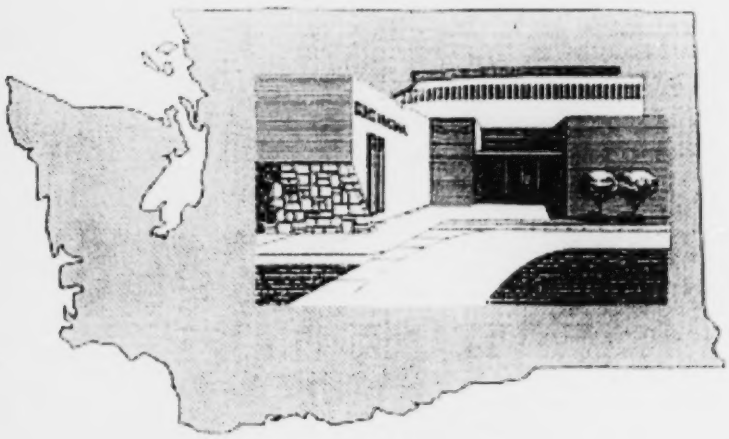
Health and Safety Guide

for K–12 Schools in Washington



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The State Department of Health and
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Health and Safety Guide

for K–12 Schools in Washington

Jointly published for Washington State by:

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December 2000

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Preface

The Health and Safety Guide for K-12 Schools in Washington (Guide) is being jointly promulgated by the Office of Superintendent of Public Instruction (OSPI) and the Washington State Department of Health (DOH) in accordance with WAC 246-366-140.

The Guide was developed between August 1996 and June 2000 under the authority of the Washington State Board of Health (SBOH) rules (WAC 246-366-140). In April 1996 DOH and OSPI formed the Washington State School Facilities Health and Safety Advisory Committee (HSAC). The HSAC was tasked with developing the Guide and related documents including a fee guide, roles and responsibilities matrix, and a school inspection protocol. During the development of the Guide, staff from DOH and Educational Service District No. 101 (ESD) compiled information from numerous health and safety regulations and experts. Several draft guides were developed and presented to HSAC for review. The Guide was field-tested by OSPI in coordination with DOH, North Thurston School District, Thurston County Health District, Snohomish School District, Snohomish County Health District, Spokane School District, and Spokane Regional Health District. Comments from those inspections have been incorporated in the Guide.

DOH and OSPI encourage all users of the Guide to examine the concepts, recommendations, citations, references, and procedures; evaluate their usefulness, effectiveness, and accuracy; identify any costs and obstacles to implementation; and describe any benefits received. Users of the Guide are invited to report their findings to Office of Environmental Health and Safety, DOH. Such information may be used to update and improve the Guide and may assist in identifying training and technical assistance needs related to school health and safety.

It is important to recognize that the practices specified or recommended in the Guide include some that are already *required* by code or law and others that are *recommendations* which may help promote good health and safety practices in schools. It is the responsibility of each school district and other users of the Guide to comply with applicable codes and laws, including those related to building, plumbing, electrical and mechanical systems, fire protection, safety, energy use, and environmental protection. However, all users of the Guide, including school districts, should evaluate the discretionary recommendations presented and adopt or promote those which, in their judgment, are relevant and applicable to their circumstances and feasible to implement. In the event that any recommendations offered in the Guide are in conflict with any applicable codes or laws, such codes or laws shall take precedence.

Acknowledgements

The Guide was prepared in accordance with Washington State Board of Health (SBOH) rules (WAC 246-366-140) by:

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Introduction

The Guide's Purpose

The Guide was written in accordance with the SBOH Primary and Secondary School Regulations, WAC 246-366-140, which state in part that DOH and OSPI " . . .shall jointly prepare a guide for use by department personnel during routine school inspections in identifying violations of good safety practices." These regulations can be found at: http://slc.leg.wa.gov. The Guide is intended to help prevent and reduce injuries and illnesses in Washington's K–12 schools.

The Focus: Existing Schools

The Guide's primary focus is to recommend good health and safety practices to help ensure safer schools. It is not aimed at preventing intentional violence in schools. Violence in schools has been extensively addressed elsewhere, including numerous documents on the Washington State Office of Attorney General and OSPI websites. Several excellent documents found on these sites include: *It's Our School, Rebuilding Schools as Safe Havens, Recommendations of the Youth Safety Summit, and Safe Schools Resource Guide.* A helpful website that focuses on school violence issues and solutions can be found at: www.nssc1.org.

Some of the safety practices that are recommended in the Guide affect school operation and maintenance, repairs and minor construction, as well as the school's administrative organization and lines of communication. The Guide is available on the Internet on both DOH and OSPI websites: www.doh.wa.gov and www.k12.wa.us/facilities.

The Guide is intended for use as a school self-inspection tool. It is not intended to be used as a checklist due to its length and detail. Inspectors may want to create their own short version of the guide for use during inspections.

The Guide also focuses on practices that can be undertaken during the design, construction, renovation, operation, maintenance, or inspection of any school. The main portion of the Guide can be used for report documentation, creating, tracking work orders, and creating customized checklists for different users.

The Guide contains appendices on inspection protocols, agency roles and responsibilities, restricted chemicals in laboratories, inspection protocols, special considerations for art classrooms, references, websites, and related documents. The broad scope of the Guide will allow it to be useful in managing a variety of health and safety issues on school property.

Causes of Poor Health and Safety Conditions

Poor health and safety conditions may result from many causes including but not limited to physical, electrical, and structural hazards, poor indoor air quality and/or temperature control, building materials, furnishings, and equipment. Human error, facility operation, and maintenance practices, as well as the various activities of students, parents, and other

school user groups can also contribute to health and safety problems. Although there is no single solution for all of these problems, thorough and routine inspections of school facilities will help in reducing illness and injuries to students, staff, and visitors.

Who Will Use the Guide?

The Guide is primarily intended for use by:

School district staff
School risk managers and safety officers
Local health jurisdictions
Architects and engineers

Other groups that have a significant interest in the Guide include:

Washington State School Directors' Association
Washington Association of School Administrators
Washington Association of School Business Officials
Washington Association of Maintenance and Operations Administrators
Washington Association for Career and Technical Education
Washington Science Teachers' Association
Washington Education Association
Washington Federation of Teachers
School Nurse Organization of Washington
Local school boards
Parents
Students
Building officials and fire marshals
School site councils
State and Federal agencies
State Board of Health
State Board of Education
Other related organizations, including the School Facilities Advisory Board
Other contract providers of supplies, services, equipment, and facilities

The other contract providers identified above include companies that provide sports and playground equipment, air handling systems, school supplies, construction materials, and building furnishings.

To ensure accountability and appropriate use of the practices presented in the Guide, each school is required under Washington State Department of Labor and Industries (L&I) WISHA rules (WAC 296-24-040) to organize a safety committee. The Guide and other related documents can assist these site-based safety committees in doing self-assessments of their facilities.

It is important for school administrators and safety committees to alert other interested parties of their efforts to address health and safety issues at their school. The school's

safety committee should work closely with the groups listed above to ensure that good communication and cooperation is obtained.

Organization and Content of the Guide

Sections A through Q address special subjects that were determined by SBOH rules and HSAC to need special attention. It is anticipated that requests for changes and additional material will necessitate that the Guide be revised to ensure its usefulness to the users. Therefore, users are encouraged to submit other rules, standards, guidelines, references, websites, and updated or useful source materials to School Program Coordinator, DOH, PO BOX 47825, Olympia, WA, 98504-7825.

Summary of Sections

Section A: General Procedures addresses the importance of having a cooperative, systematic approach while working with school districts. The need for proper communication channels, building and demographic data, and injury and health information is reviewed along with the review of prior reports from health agencies and others. The need to discuss future plans for minor or major remodeling is also covered in this section.

Section B: Buildings covers operation and maintenance. These areas include cleanliness, chemical storage, floors, walls, ceilings, vermin control, windows and window shades, and storage areas.

Section C: Plumbing, Water Supply, and Fixtures refers to the Washington Administrative Code requirements for public water systems (WAC 246-290). The section also refers to maintaining compliance with the Washington State Building and Plumbing codes. These codes are available at public libraries and on the Internet at **http://slc.leg.wa.gov**.

Section D: Sewage Disposal outlines the school's responsibilities to local and state health authorities in addressing on-site sewage disposal systems. The Washington Administrative Code that applies in this area is WAC 246-366. Maintenance and abandonment of sewage systems is discussed in WAC 246-272.

Section E: Heating and Ventilation deals with requirements related to keeping schools free of excessive heat, condensation, odor, and contaminants. The State Building Code and the American Society of Heating, Refrigeration and Air Conditioning Engineers Standard are referenced as sources of information in this area.

Section F: Temperature Control discusses minimum temperatures and room temperature control automation.

Section G: Sound Control describes acceptable noise levels in schools. The section addresses portables, new construction, building and mechanical codes, as well as industrial arts areas. Impulse, impact, and long-term noise exposure levels are addressed. A table in WAC 246-366-110(5) covers most school situations.

Section H: Lighting sets forth regulations governing minimum light intensities in general instruction areas, classrooms, libraries, laboratories, kitchens, corridors, auditoriums, gymnasiums, locker rooms and other areas of the school. Other issues such as shadows, glare, task lighting, and excessive brightness are also covered.

Section I: Food Handling refers to WAC 246-366-13-215, 217, 070(3)(f) and 140. Reference is also made to EPA and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requirements for separating toxic materials from food. Federal and state rules and laws concerning food are available at public libraries and on the Internet at www.mrsc.org/wac/htm.

Section J: General Safety deals with injury prevention. Several hazards listed in this section have been observed frequently, while others occur less often or rarely. The frequency and severity of unsafe conditions are combined to prioritize hazards for elimination or mitigation. Many school districts have only limited funding for maintenance and are able to address only those hazards which present the greatest potential for severe injury, serious illness, or long-term disability. In some extraordinary cases, health officials have statutory power and a duty to require schools to immediately eliminate hazards that pose an immediate life safety threat. Health officials may also require that children be kept away from a hazard by closing part or all of a school facility until the hazard is eliminated.

Most of the items in this section are required by WAC, while others are recommendations based on the combined experience of committee members and inspectors. These distinctions are clearly made throughout the Guide so that parents, teachers, inspectors, and school administrators will know what is required versus what is recommended. This is a key distinction for many school districts as they address maintenance, operations and capital improvement projects related to health and safety issues.

Section K: Laboratories and Science Classrooms contains basic safety provisions that are consistent with DOH, OSPI, the Washington State Science Teachers' Association, and the L&I WISHA rules.

There are numerous federal, state, local, private, and non-profit organizations involved in science laboratory issues. These organizations may provide funding or technical assistance, conduct research, supply publications, serve in a regulatory capacity, or represent special interest groups.

In addition to this section, Appendix D contains information regarding chemicals that should **not** be in K–12 schools under any circumstances (Table 1), and chemicals that can be used in advanced classes under controlled conditions and in small quantities (Table 2).

Section L: Vocational Instruction references the current *Safety Guide For Vocational, Trade and Industrial Technology Education,* published by OSPI. It is anticipated that the currently available hard-copy version will be revised and available for downloading from the Internet. Copies of the current version are on file at local health agencies and educational service districts across the state.

L&I reviewed the individual items listed in the Vocational Instruction section in the first part of year 2000 for accuracy and citations to code sections.

Section M: Bloodborne Pathogens contains WISHA rules that have been distributed to schools by OSPI and other agencies.

Section N: Playgrounds refers users to the Consumer Product Safety Commission (CPSC) *Handbook for Public Playgrounds* and the American Society for Testing and Materials (ASTM) voluntary standards for public playgrounds. The CPSC Website www.cpsc.gov/cpscpub/pubs/playpubs.htm contains the handbook referenced above as well as other useful playground safety information and checklists that address a wide range of playground safety and health topics.

Section O: Animals in Classrooms addresses live animals, reptiles, birds, insects, lab specimens, and other live or dead animals and was written with input from animal advocates, veterinarians, teachers, custodians, nurses, parents, risk managers, principals, environmental health professionals, and others with a broad range of experience in dealing with animals in schools

In addition to this section, Appendix F provides information in order to answer specific questions related to the proper handling of animals and specimens in classrooms.

Section P: Disaster Preparedness and Emergency Procedures deals with disasters and emergencies at schools. Being prepared for emergencies and disasters requires multi-agency coordination and pre-planning for each foreseeable school emergency situation. Information on evacuation routes, awareness of L&I WISHA rules, local response capabilities and other conditions need to be provided to teachers, parents, and students.

Regular drills help make such plans work and are an important part in preparing for emergencies. Ongoing documentation of training and drills also helps to maintain the readiness capacity of schools to act. Records of drills and training also answer any questions about preparedness, either before or after any emergency or disaster situation occurs.

Section Q: Indoor Air Quality addresses air quality in schools and refers readers to useful indoor air quality (IAQ) reference materials. IAQ issues have become a major problem for some schools. Mold, toxic fumes, volatile compounds, dust, auto exhaust, and lack of sufficient outside air have all contributed to indoor air quality problems in schools in Washington. In some instances these problems have resulted in evacuations and temporary closures of schools.

The Environmental Protection Agency (EPA) and DOH have both written publications targeted specifically at IAQ in schools. EPA's *Tools for Schools* is a user-friendly, problem-solving tool targeted mainly at existing schools, with concise action lists for various school staff and others. Contact EPA for this publication.

DOH's *School Indoor Air Quality Best Management Practices Manual* covers air quality issues related to new school siting, design, materials, construction scheduling, source control, air quality standards, dealing with specialty areas in shops and labs, and differences in ventilation systems. The manual is free and can be downloaded at http://www.doh.wa.gov/ehp/ts/iaq/pdf.

These publications should help schools solve many IAQ problems as they emphasize effective communication with teachers, students, and parents and have become valuable references for school districts in Washington and in other states and Canada.

A. GENERAL PROCEDURES

		Required	Recommended	WAC or Other Code Reference
A 001 S ☐ U ☐	A health and safety pre-inspection interview shall be conducted with the school administrator for routine inspections. Procedures relating to health district inspections of schools shall be in compliance with the jointly agreed upon guidelines of the Department of Health (DOH) and the Office of Superintendent of Public Instruction (OSPI).	x		296-24-040
A 002 S ☐ U ☐	General School Data: Review building age, type, square footage; names of key personnel on site; building floor and site plans as appropriate (e.g.: fire exit routes and/or directional maps which are often given to parents at "open-house" events.	x		OSPI and DOH recommendation
A 003 S ☐ U ☐	Demographics: Review enrollment numbers, grade span, etc. (approximate numbers are sufficient).	x		OSPI and DOH recommendation
A 004 S ☐ U ☐	Safety and Health Data: Review general and/or summarized health and safety information and reports which may be useful in assessing health or safety trends or problems within the school.	x		OSPI and DOH recommendation
A 005 S ☐ U ☐	History: Review previous health agency reports, inspections, follow-ups and complaints (if any) and their disposition or other actions taken by the school in response.	x		OSPI and DOH recommendation
A 006 S ☐ U ☐	Planning: Information related to planned future site improvements, additions, remodels, etc., should be shared with the health official prior to the inspection.	x		OSPI and DOH recommendation
A 007 S ☐ U ☐	Recent inspection reports from other agencies may be reviewed by the health officer if provided by the school administrator.	x		296-24-020
A 008 S ☐ U ☐	When building code requirements are questioned the local building official should be consulted.	x		RCW 19.27 UBC
A 009 S ☐ U ☐	When fire code requirements are questioned the local fire marshal or fire chief should be consulted. If no local fire official is available then the district should consult the state fire marshal.	x		UFC RCW 19.27
A 010 S ☐ U ☐	When daycare, pre-school, headstart or other similar programs are located in K-12 schools DOH day care regulations on safety and health should be consulted. DOH and some local health agencies have staff available to inspect these sites and respond to questions.	x		WAC 388-150

B. BUILDINGS

		Recommended	Required	WAC or Other Code Reference
B 001 S ☐ U ☐	Buildings shall be kept clean and in good repair.		x	246-366-050(1) 296-24-12003 (1)
B 002 S ☐ U ☐	Ceilings in instructional areas shall have a minimum clear vertical distance of eight feet from finished floor to finished ceiling.		x	246-366-050(2)
B 003 S ☐ U ☐	Any projections from the finished ceiling shall be not less than seven feet vertical distance from the finished floor; i.e., beams, lighting fixtures, sprinklers, pipe work.		x	246-366-050(2)
B 004 S ☐ U ☐	Stairways and steps shall have handrails and non-slip treads in compliance with the applicable State Building Code (UBC).		x	246-366-050(3) 296-24-76501 UBC
B 005 S ☐ U ☐	Floors shall have an easily cleanable surface. Carpet is acceptable in appropriate locations. Refer to the School Indoor Air Quality Best Management Practices Manual published by DOH.		x	246-366-050(4)
B 006 S ☐ U ☐	All buildings and premises shall be free of insects, rodents, and conditions which attract, provide harborage, and promote their propagation.		x	246-366-050(5) 296-24-12021
B 007 S ☐ U ☐	All hazardous substances and chemicals (e.g., cleaning and disinfecting products) shall be easily identified (e.g., labeled), and used with caution. They must be stored in such a manner as to prevent unauthorized use or possible contamination of food and drink.		x	246-366-050(6) 296-62-054
B 008 S ☐ U ☐	There shall be sufficient, easily accessible, well-lighted, heated, and ventilated space provided for the storage of outdoor clothing, play equipment, and instructional equipment.		x	246-366-050(7)
B 009 S ☐ U ☐	School buildings shall be provided with windows sufficient in number, size, and location to permit students to see to the outside. No student shall occupy an instructional area without windows for more than 50 percent of the school day.		x	246-366-050(8)
B 010 S ☐ U ☐	Exterior sun control shall be provided to exclude direct sunlight from window areas and skylights in instructional areas, assembly, and meeting rooms during at least 80 percent of normal school hours. Sun control is not required for sun angles less than 42 degrees, nor if air conditioning is provided, nor if Low E glass is installed.		x	246-366-050(9)

C. PLUMBING, WATER SUPPLY, AND FIXTURES

		Recommended	Required	WAC or Other Code Reference
C 001 S U ☐ ☐	At a minimum plumbing shall be sized, installed, and maintained in accordance with the state building (UBC) and plumbing (UPC) codes.		x	246-366-060 246-290 UPC
C 002 S U ☐ ☐	The water supply system for a school shall be designed, constructed, maintained, and operated in accordance with WAC 246-290. (note: the UBC requires compliance with the UPC)		x	246-366-060 246-290 UBC/UPC
C 003 S U ☐ ☐	Water from drinking fountains shall clear the nozzle to allow safe and healthy drinking access.	x		ANSI 24.2-1942
C 004 S U ☐ ☐	Vacuum breakers (i.e., anti-siphon devices, air-gap separations, reduced pressure devices, or double check valves) are required on water outlets with either threaded, serrated, or quick-coupling nozzles to prevent cross-contamination of drinking water supply.		x	UPC 603.0
C 005 S U ☐ ☐	Soap shall be provided for all hand washing facilities.		x	246-366-060
C 006 S U ☐ ☐	Single-service towels shall be provided for all hand washing facilities. Common use towels are prohibited. Warm air dryers may be used in place of single-service towels. Roller-type cloth towel dispensers are also acceptable.		x	246-366-060
C 007 S U ☐ ☐	Toilet paper shall be available and located adjacent to each toilet fixture.		x	246-366-060 296-24-12007
C 008 S U ☐ ☐	Toilet and hand washing facilities shall be accessible for use during school hours and scheduled events.		x	246-366-060
C 009 S U ☐ ☐	Hand washing facilities shall be provided with hot water at a maximum of 120 degrees fahrenheit (F).		x	246-366-060
C 010 S U ☐ ☐	Hand operated, self-closing faucets, when installed, shall provide ten seconds of running water. Self-closing faucets are required by the plumbing code in new construction and also when faucets are replaced.		x	246-366-060 (d) UPC

C. PLUMBING, WATER SUPPLY, AND FIXTURES

		Recommended	Required	WAC or Other Code Reference
C 011 S U ☐ ☐	Showers with hot and cold water controls shall be provided for all physical education classes in grades 9-12. Hot water temperature shall be maintained between 100 degrees F and 120 degrees F to prevent scalding.		x	246-366-060(4)(a)
C 012 S U ☐ ☐	Drying areas, when provided, shall be adjacent to showers and locker rooms and have impervious, non-skid floors.		x	246-366-060
C 013 S U ☐ ☐	Walls in shower rooms shall be impervious up to the shower head height. Upper walls and ceilings in shower rooms shall have smooth and easily washable surfaces.		x	246-366-060
C 014 S U ☐ ☐	Locker rooms and dressing rooms shall be impervious, non-skid floors.		x	246-366-060
C 015 S U ☐ ☐	Walls in locker rooms and dressing rooms shall have smooth and easily washable surfaces.		x	246-366-060
C 016 S U ☐ ☐	School supplied towels shall be for individual use only and shall be laundered after each use.		x	246-366-060

D. SEWAGE DISPOSAL

		Recommended	Required	WAC or Other Code Reference
D 001 S U ☐ ☐	All sewage and waste water from a school shall be drained to a sewage disposal system which is approved by the jurisdictional agency having authority.		x	246-366-070
D 002 S U ☐ ☐	On-site sewage disposal systems shall be designed, constructed, and maintained in accordance with WAC 246-272.		x	246-366-070 246-272
D 003 S U ☐ ☐	Septic tanks that are no longer in use shall be abandoned in accordance with the Washington State Board of Health on-site sewage system regulations.		x	246-272-1850

E. VENTILATION

		Recommended	Required	WAC or Other Code Reference
E 001 S U ☐ ☐	All rooms used by students or staff shall be kept reasonably free of all objectionable odor, excessive heat, or condensation.		x	246-366-080
E 002 S U ☐ ☐	All sources producing air contaminants of public health importance shall be controlled by the provision and maintenance of heating, ventilating, and air conditioning (HVAC) systems as approved by the health officer in conformity with the Washington State building code and ASHRAE Standards in effect as of the date of construction.		x	246-366-080 296-62-075 UBC ASHRAE

F. HEATING/TEMPERATURE CONTROL

		Recommended	Required	WAC or Other Code Reference
F 001 S ☐ U ☐	All occupied areas of the facility shall be heated to maintain a minimum temperature of 65 degrees F except for gymnasiums which shall be a minimum of 60 degrees F.		x	246-366-090
F 002 S ☐ U ☐	Heating, ventilating, and/or air conditioning systems shall be equipped with automatic room temperature controls. Computerized systems that control each room from a remote location are acceptable.		x	246-366-100

S=Satisfactory
U=Unsatisfactory

G. SOUND CONTROL

		Recommended	Required	WAC or Other Code Reference
G 001 S ☐ U ☐	Requirements for new construction are located in RCW 19.27, WAC 246-366-110, the state building and mechanical codes. New construction requirements of 246-366-110(2) shall be specified in shop plans, and verified during the preoccupancy inspection.		x	246-366-110 RCW 19.27
G 002 S ☐ U ☐	Existing portables built prior to 1/1/90 are exempt from noise level requirements when: (1) there have been no changes that would have increased noise levels; (2) the portable was previously used as a classroom; (3) the portable was previously owned by the district; and (4) the portable meets all site requirements.		x	246-366-110 (3)
G 003 S ☐ U ☐	The maximum ambient noise level in industrial arts, voc-ed, and trade classrooms constructed after 1/1/90 shall not exceed 65 dBA when all chemistry fume hood and dust exhaust systems are operating. Testing shall be done when room is unoccupied.		x	246-366-110(4)
G 004 S ☐ U ☐	The noise exposure for students in voc-ed and music areas shall not exceed the L & I WISHA noise level rules. No person shall be exposed to sustained sound levels equal to or greater than 115 dBA for 1 second or longer, or to impact / impulse noise over 140 dBA for less than one second.		x	246-366-110 (5) WAC 296-62-090
G 005 S ☐ U ☐	When noise exposure exceeds the L & I WISHA maximum levels in any student or staff occupied area, and engineering methods cannot reduce the noise levels to a permissible level, approved hearing protection shall be provided and used. Maximum sound exposure levels can be found in L & I WISHA rules at www.mrsc.wa.gov.		x	246-366-110 (5) table1 246-366-110 (6) WAC 296-62-090

H. LIGHTING

		Recommended	Required	WAC or Other Code Reference
H 001 S ☐ U ☐	Minimum light intensity of ten foot candles, from general, task, or natural lighting shall be provided in non-instructional areas including auditoriums, lunchrooms, assembly areas, toilet and store rooms, corridors, and stairs.		x	246-366-120
H 002 S ☐ U ☐	Minimum light intensity of 20 foot candles, from general, task, or natural lighting shall be provided in gymnasiums including main and auxiliary spaces, and shower and locker rooms.		x	246-366-120
H 003 S ☐ U ☐	Minimum light intensity of 30 foot candles, from general, task, or natural lighting shall be provided in kitchen areas including food storage and preparation rooms.		x	246-366-120
H 004 S ☐ U ☐	Minimum light intensity of 30 foot candles, from general, task, or natural lighting shall be provided in instructional areas including study halls, lecture rooms, and libraries. In rooms with computers, or during audio-visual presentations, lighting may be reduced. Emergency exit lights may not be turned off.		x	246-366-120 UFC
H 005 S ☐ U ☐	Minimum light intensity of 50 foot candles, from general, task or natural lighting shall be provided in special instructional areas including sewing rooms, laboratories (including chemical storage areas), vocational, trade, industrial, drafting, and art and craft rooms.		x	246-366-120
H 006 S ☐ U ☐	Excessive brightness and glare shall be controlled in instructional areas. Surface contrasts and glare shall not cause excessive eye accommodation or eye strain problems.		x	246-366-120
H 007 S ☐ U ☐	Lighting shall be provided in a manner which minimizes shadows and other lighting deficiencies on work and teaching surfaces.		x	246-366-120

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I. FOOD SERVICE

		Recommended	Required	WAC or Other Code Reference
I 001 S U ☐ ☐	Food storage, preparation, and service facilities shall be maintained and operated in accordance with Washington State Board of Health food regulations.		x	246-366-130 246-215 246-217
I 002 S U ☐ ☐	Food transported between central kitchens and schools shall be kept at required food temperatures, in tightly covered containers, and shall be transported in enclosed vehicles.		x	246-366-130 246-366-070(3) (f)
I 003 S U ☐ ☐	Toxic materials, including bleach, ammonia, rodent poison, bug spray, and cleaning supplies, shall not be stored with dry food items.		x	EPA & FIFRA 246-215-140 Chapter 16-228 WAC

J. SAFETY

		Recommended	Required	WAC or Other Code Reference
J 001 S ☐ U ☐	Safety glass shall be installed in all doors, display cases, and other large glass areas as required by the state building code (UBC).		x	RCW 19.27 UBC 2406.4
J 002 S ☐ U ☐	Safe motor vehicle drop-off and pick-up locations are required for student arrival and departure.		x	392-145 392-151
J 003 S ☐ U ☐	All custodial maintenance supplies shall be labeled as to specific contents and be stored in secure areas inaccessible to students. MSDS sheets are required to be kept on site and readily available.		x	246-366-050 246-215-110
J 004 S ☐ U ☐	Custodial closets, boiler rooms, and other areas where poisonous compounds are stored should be inaccessible to students.	x		246-366-050 1020.1 UBC
J 005 S ☐ U ☐	Flammable liquids in excess of ten gallons total shall be stored in approved flammable storage cabinets as required by state fire code (UFC).		x	79.02.5.8 UFC WAC 296-24-33009
J 006 S ☐ U ☐	First aid kits shall be provided, shall be visible to students and staff, and comply with L & I WISHA rules. All first aid kits shall be regularly restocked.		x	246-24-065 296-24-06160 296-24-06145
J 007 S n U a	**NOTE:** The size and contents of first aid kits should be determined by assessing what kits are needed in each school. The number of children should be considered as well as the number of staff, to determine how many kits are needed. School administrators and local health officials should jointly evaluate the first aid kit needs.	x		DOH recommendation
J 008 S ☐ U ☐	First aid supplies other than those in first aid kits shall be properly stored and organized in cabinets or drawers and labeled as to their contents.	x		DOH recommendation
J 009 S ☐ U ☐	Cots or sick beds, when provided, shall have non-absorbent surfaces that are easily sanitized. Pillow covers and bed sheets shall be laundered or replaced between uses. Disposable bed sheets and pillow cases are recommended.		x	WAC 392-198 WAC 296-62-08001
J 010 S ☐ U ☐	Medication shall be stored in a locked storage area. Unauthorized access by students or other persons should be prevented. Reference OSPI Bulletin 31-98 and OSPI website for additional information: http://www.k12.wa.us/learnteachsupp/healthservices/		x	RCW 28A.210.260 RCW 28A.210.270 WAC246-370(7)(b)

J. SAFETY

		Recommended	Required	WAC or Other Code Reference
J 011 S ☐ U ☐	Radiators and steam and hot water pipes shall be protected or shielded in hallways, shower areas, auditoriums, and all other student traffic areas to prevent accidental burns.		x	296-24-73511
J 012 S ☐ U ☐	Paper cutters shall have finger guards and lock down safety latches. Repair or replace all paper cutters that have been modified or broken. Blades shall be fastened down when not in use.		x	296-24-073 ANSI
J 013 S ☐ U ☐	Whenever a stage or platform drop-off exceeds four feet, a safety warning strip is required. The abrasive safety strip, which can be felt in the dark and is of contrasting color, shall be placed two feet from the edge of stages or elevated platforms. A lighted LED strip is acceptable.	x		DOH recommendation
J 014 S ☐ U ☐	Stage areas must meet L & I WISHA rules and fire code requirements with regard to catwalks, rigging, pits, curtains, and storage areas.		x	WISHA WAC 296-24-75005 WAC 296-24-75003 NFPA
J 015 S ☐ U ☐	Coat hooks should be located or protected so that they do not create a hazard to students.	x		DOH recommendation
J 016 S ☐ U ☐	Scissors without sharp points (safety scissors) are recommended for student use in grades K-3.	x		DOH recommendation
J 017 S ☐ U ☐	Audiovisual equipment (especially TV"s and other movable heavy items) which could fall from carts should be secured to the cart in a way that prevents the equipment from coming loose from the cart if the equipment or cart tips over.	x		CPSC Safety Alert; April 1988 DOH recommendation
J 018 S ☐ U ☐	Lockers and bookshelves should be secured to prevent tipping.	x		CPSC Safety Alert; March 1990 WAC 246-370(7)
J 019 S ☐ U ☐	Walls, doors, and posts behind basketball backboards should be padded and free of obstruction where it is possible for players to collide with them. Pads should be sufficient in size and depth to mitigate skull and spinal cord injuries.	x		DOH recommendation as per WSU, ASTM and CPSC consultations
J 020 S ☐ U ☐	Protective padding should extend to the floor level since most serious permanent spinal cord and skull injuries that occur during basketball happen near the floor/wall junction.	x		DOH recommendation

J. SAFETY

		Recommended	Required	WAC or Other Code Reference
J 021 S U ☐ ☐	In arts and crafts areas, the use of pre-mixed pottery clay is recommended rather than using a pug-mill. Only non-toxic art supplies should be used.	x		DOH recommendation
J 022 S U ☐ ☐	Personal protective equipment and safety training for students in arts and crafts should be provided (also see item L002).	x		DOH recommendation
J 023 S U ☐ ☐	PE and sports equipment, apparatus, fixtures, and safety practices should comply with manufacturer's instructions and with the rules and recommendations of the WIAA. Student-athletes should have documented safety training. Supervision of all hazardous activities should be provided at all times.	x		DOH recommendation WIAA
J 024 S U ☐ ☐	Patients in the school health or nurse's room should be visible to office staff at all times.	x		DOH recommendation
J 025 S U ☐ ☐	Electrical receptacles shall be properly grounded. Ground fault interrupter (GFI) devices shall be provided on all electrical receptacles within six (6) feet of sinks and other grounding sources. There must be sufficient number of outlets to minimize the use of extension cords.		x	246-366-140 296-24-95607 NEC

K. LABORATORIES AND SCIENCE CLASSROOMS

		Recommended	Required	WAC or Other Code Reference
K 001 S ☐ U ☐	Science laboratories shall have an inventory of chemicals on hand.		x	246-366-140 296-62-40015 296-62-40025
K 002 S ☐ U ☐	Science laboratories shall have a written Chemical Hygiene Plan.		x	246-366-140 296-62-40009
K 003 S ☐ U ☐	Emergency eyewash and shower stations shall be provided as required by L & I WISHA rules.		x	296-62-130 Part L 246-366-140 296-62-40025 Part Q ANSI Z358.1-1998
K 004 S ☐ U ☐	Eye wash stations shall be located within 50 feet or ten seconds walking distance from all lab science work stations.		x	246-366-140 296-62-130(2)(a) WRD 91-13A & 12.35
K 005 S ☐ U ☐	Safety showers shall be located within 50 feet or ten seconds of all laboratory work stations. A deluge shower is required in chemical areas.		x	246-366-140 296-62-130 Part L 296-62-130(2)(c) ANSI Z358.1-1998
K 006 S ☐ U ☐	Eye-wash stations and emergency showers shall be handicap accessible and operable "hands-free" so that the user can hold both eyes open. Hand-held showers and eye-wash equipment do not meet current L & I WISHA rules (except as auxillary or extra protection).		x	ADA 296-62-130
K 007 S ☐ U ☐	Eye wash stations shall provide 2.5 gpm for at least 15 minutes at 25 PSI or less. In some areas with high water pressure, flow regulators may be required on the eye wash stations.		x	246-366-140 296-62-130 (2)(c)
K 008 S ☐ U ☐	Emergency showers and eye wash units shall be tested for proper operation quarterly. Written documentation of tests shall be maintained on site.		x	246-366-140 296-62-130 (2) (f)
K 009 S ☐ U ☐	Normal room ventilation does not provide an adequate number of air changes for chemical laboratories, chemical storage rooms, and photography darkrooms. Adequate ventilation must be provided. In new construction, UBC and WISHA require 8-12 air changes per hour.		x	246-366-140 296-62-110; 075 296-62-40025 (3) (d) (XI)
K 010 S ☐ U ☐	A building commissioning report which documents air volumes meeting 15 cubic feet per second (cfm) per occupant is recommended.	x		DOH Indoor Air Best Management Practices Manual

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K. LABORATORIES AND SCIENCE CLASSROOMS

		Recommended	Required	WAC or Other Code Reference
K 011 S ☐ U ☐	There shall be an on-demand, mechanical ventilation system providing additional air exchange as required by WISHA and the UBC for chemical areas such as photo darkrooms, storerooms and chemistry labs (this is in addition to the building HVAC system).		x	246-366-140 296-62-110 296-62-075
K 012 S ☐ U ☐	Make-up air must be provided to laboratories in amounts equal to exhaust air when the ventilation rate is increased.		x	246-366-140 296-62-11009
K 013 S ☐ U ☐	All lab and chemical storeroom air exhausts shall be on a separate system from other areas of the school and vent directly to the outside in a manner which prevents exhaust from re-entering the building (away from occupied areas and air intakes).		x	246-366-140 296-62-11007
K 014 S ☐ U ☐	No unapproved heating devices are allowed in laboratories or storerooms. Portable electric stoves are not approved heating devices for laboratories and storerooms.		x	246-366-140 296-24-95601 UFC
K 015 S ☐ U ☐	Electrical receptacles shall be properly grounded. Ground fault interrupter (GFI) devices shall be provided on all electrical receptacles within six (6) feet of sinks, gas pipes, and other grounding sources. There must be sufficient number of outlets to minimize the use of extension cords.		x	246-366-140 296-24-95607 NEC
K 016 S ☐ U ☐	All electrical equipment shall be properly grounded. Portable electrical equipment shall be double insulated or provided with a UL-approved ground prong.		x	246-366-140 296-24-95607 296-24-24515(3) NEC
K 017 S ☐ U ☐	Electrical extension cords shall be UL listed, and the wire size shall be appropriate for the applied use.		x	246-366-140 296-24-95609 UFC NEC
K 018 S ☐ U ☐	There shall be at least one demonstration fume hood for each laboratory where hazardous chemicals are used.		x	246-366-140 296-62-40025 (3)(IV) (b) 296-62-40009 (3)(c)
K 019 S ☐ U ☐	Fume hoods in school buildings must comply with AHERA asbestos regulations.		x	246-366-140 296-62-077 AHERA
K 020 S ☐ U ☐	Chemicals shall not be stored in fume hoods except where the hood has been specifically built with a ventilated storage area. Chemicals shall not be stored in the demonstration or working area of the hood.		x	296-62-40025 (3) (d) (ii) (E)

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K. LABORATORIES AND SCIENCE CLASSROOMS

		Recommended	Required	WAC or Other Code Reference
K 021 S ☐ U ☐	All fume hoods shall exhaust directly to the outside, away from all occupied areas and air intakes in order to prevent exhaust from re-entering the building.		x	246-366-140 296-62-11007 UMC
K 022 S ☐ U ☐	Fume hood air velocity shall be 60-125 linear feet per minute (LFM) checked quarterly with a velocity meter. Written documentation of all tests shall be maintained on site. The exhaust capture path shall direct contaminants away from the user. With the sash raised to 12 inches, the air flow should measure at least 60 LFM.		x	246-366-140 296-62-40025 (3) (c) (iv) (H) ASHRAE 10-1995
K 023 S ☐ U ☐	Fume hood use shall be required when using chemicals with a Threshold Limit Value (TLV) of 50 ppm or less.		x	246-366-140 296-62-40025 (3) (e) (i) (AA)
K 024 S ☐ U ☐	All electrical devices used in the fume hood such as switches, lights, motors, etc., shall be explosion-proof.		x	246-366-140 296-62-40025 296-24-95613 Part L NEC
K 025 S ☐ U ☐	The chemical hygiene officer (e.g., science department chairperson or science teacher) shall maintain a written operations and maintenance program for laboratory fume hoods and other mechanical equipment in science laboratories.		x	246-366-140 296-62-40025 296-62-40009(3)(c)
K 026 S ☐ U ☐	Master shut-offs shall be provided and identified for electricity and gas in all laboratory areas. Directional signs shall be provided. A master water shutoff is recommended, but not required.		x	246-366-140 296-62-40025 (3) (d) (ix)
K 027 S ☐ U ☐	Invisible hazards (radiation, chemical, electrical, laser, and heat) shall be posted with warning signs or symbols when present.		x	246-366-140 296-24-135 296-62- 09004 Part J
K 028 S ☐ U ☐	No food items are permitted in chemical laboratories or storerooms (including lab refrigerators). No eating, drinking or gum chewing is permitted in labs to prevent poisioning through ingestion.		x	246-366-140 296-62-40025
K 029 S ☐ U ☐	Chemical storerooms shall be lockable, inaccessible to unsupervised students, and have self-closing doors per WISHA, DOH, and state fire code requirements for chemical laboratories and chemical storerooms. Doors shall have a one-hour fire rating (or greater as required by local fire code).		x	246-366-140 296-62-40009 296-62-40025 UFC
K 030 S ☐ U ☐	Chemical storerooms shall be large enough for adequate and proper storage of chemicals. Storage areas shall be maintained in a neat, organized, and clean manner with chemicals stored compatibly.		x	246-366-140 296-62-40025

K. LABORATORIES AND SCIENCE CLASSROOMS

		Recommended	Required	WAC or Other Code Reference
K 031 S ☐ U ☐	Chemical storerooms shall have sturdy, well supported shelves secured to the walls. All shelves shall have "earthquake lips" on all shelf edges.		x	246-366-140 296-62-40009 296-62-40025
K 032 S ☐ U ☐	Chemical storerooms shall have all hazardous chemicals stored at or below eye level (typically below 5' 6") with heavy objects stored on lower shelves. Higher shelves may be used for other items, e.g., glassware, equipment, paper goods, etc.		x	246-366-140 296-62-40025 296-62-40009
K 033 S ☐ U ☐	Chemical storage areas shall be kept cool (between 55 and 80 degrees F) and dry (relative humidity between 30 and 60%).		x	246-366-140 296-62-40009 296-62-40025
K 034 S ☐ U ☐	Chemicals should be organized and stored according to a recognizable, safe system (such as Flinn, Baker, Sargent-Welch, etc.) and should have the four color NFPA diamond on the container for emergency responders. Labels should clearly denote the contents of each container and the date received.		x	246-366-140 296-62-40009 296-62-40025 NFPA
K 035 S ☐ U ☐	Chemicals marked only with teacher codes (e.g., A, B, C, D), for student testing/analysis, should not be allowed in permanent storage. Mix only enough for one day's classes and then restock or dispose. All leftover unmarked chemicals should be disposed of in accordance with WAC requirements. Daily disposal is recommended.	x		246-366-140 296-62-40009
K 036 S ☐ U ☐	All flammables shall be stored in approved flammable storage cabinets with self-closing doors. Flammables (red labels) and acids and bases (white labels), shall be stored separately.		x	246-366-140 296-24-33009 296-62-40009
K 037 S ☐ U ☐	The chemicals in Table 1 of Appendix D to this Guide are a safety hazard and may not be used in K-12 schools. If found, they must be removed from the school by qualified personnel and properly disposed of in accordance with the school's chemical hygiene plan and DOE regulations.		x	246-366-140
K 038 S ☐ U ☐	The chemicals in Table 2 of Appendix D to this Guide have been determined by DOH and OSPI as suitable in small quantity and in advanced classes in senior high laboratories. No more than one pound of each chemical may be stored on site in any case.	x		246-366-140 296-62-40009
K 039 S ☐ U ☐	Chemicals shall be used within one or two years of purchase. Old chemicals shall be disposed of in accordance with DOE regulations. An inventory of all chemicals shall be maintained and kept up to date. All chemicals shall be dated upon receipt into the lab or storage area.		x	246-366-140 296-62-40009
K 040 S ☐ U ☐	There shall be a separate storage shelf, cabinet or area for reactants such as sodium metal, potassium metal, and metabolic peroxides.		x	246-366-140 296-62-40009 296-62-40025

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K. LABORATORIES AND SCIENCE CLASSROOMS

		Recommended	Required	WAC or Other Code Reference
K 041 S ☐ U ☐	All acids shall be stored in approved acid cabinets. Non-compatible acids shall be stored separately (e.g., nitric acid).		x	246-366-140 296-62-40009 296-62-40025
K 042 S ☐ U ☐	Chemicals are stored according to their properties, not alphabetically (i.e., flammables, health hazard, reactive, oxidizer, radioactive, etc.).		x	246-366-140 296-62-40009 296-62-40025
K 043 S ☐ U ☐	Only explosion-proof refrigerators shall be used to store volatile chemicals. Non explosion-proof refrigerators or other electrical devices shall not be located in areas with vaporous or flammable chemicals.		x	246-366-140 296-62-40009 UFC
K 044 S ☐ U ☐	Instructors shall wear personal protective equipment (PPE) when using corrosive, toxic, reactive, or irritating chemicals and during hazardous activities as required by L & I WISHA rules.		x	246-366-140 296-62-40025 (3) (d) 296-24-07501-A2
K 045 S ☐ U ☐	Eye protection, safety glasses, and face shields shall meet requirements of the American National Standards Institute (ANSI Z.87.1). Students should wear personal protective equipment (PPE) when using corrosive, toxic, reactive, or irritating chemicals and during hazardous activities.		x	246-366-140 296-62-40009 296-24-078- Part A2 70.100
K 046 S ☐ U ☐	A written policy notifing wearers of contact lenses should be developed to address the potential for eye irritation or injury if chemicals, gases or fumes adversely react with contact lens (see 296-62-40025 (1) - General Rules).	x		246-366-140 296-24-078 A-2 296-62-40025
K 047 S ☐ U ☐	A non-asbestos fire blanket shall be provided, identified, readily available, and visible to students and staff.		x	246-366-140 296-62-40009 296-62-40025
K 048 S ☐ U ☐	Safety shields on the demonstration table shall be used for demonstrations wherever the possibility of explosion exists.		x	246-366-140 296-62-40009
K 049 S ☐ U ☐	Jewelry shall not be worn if personal safety would be jeopardized.		x	246-366-140 296-62-40009
K 050 S ☐ U ☐	Loose hair shall be restrained so that personal safety is not jeopardized.		x	246-366-140 296-62-40009 296-62-40025

K. LABORATORIES AND SCIENCE CLASSROOMS

		Recommended	Required	WAC or Other Code Reference
K 051 S ☐ U ☐	All laboratories shall have a written clean-up plan for spills. All laboratories shall have a spill clean-up kit or materials for absorbing spills identified and readily available to students and staff.		x	246-366-140 296-62-40009
K 052 S ☐ U ☐	Waste disposal shall adhere to DOE regulations.		x	246-366-140 296-62-40009 RCRA - CH.40CFR
K 053 S ☐ U ☐	A written and documented lab safety orientation shall be provided for all staff and students.		x	246-366-140 296-62-40009
K 054 S ☐ U ☐	A telephone (or intercom) for reporting emergencies shall be located in or near the laboratory. Emergency telephone numbers shall be readily accessible. Staff shall be trained in emergency procedures.		x	246-366-140 296-62-40009
K 055 S ☐ U ☐	Lab floor plans shall be kept in the school office. A listing of exits, chemicals, and storage place of chemicals shall be included for use by emergency responders.		x	246-366-140 296-62-40009
K 056 S ☐ U ☐	Fire extinguishers shall be provided (ABC type). Fire extinguishers shall be identified and readily accessible to staff and students. Demonstration or hands-on training shall be provided during safety orientation.		x	246-366-140 296-24-592 296-62-40009 296-62-40011
K 057 S ☐ U ☐	A fire alarm system shall be provided. Alarm pull stations shall be identified and readily accessible to staff and students.		x	246-366-140 296-62-40009 296-24-63101 G-3
K 058 S ☐ U ☐	Fire retardant lab coats shall be used as required by L & I WISHA rules when appropriate for a current project or demonstration.		x	246-366-140 296-62-07501
K 059 S ☐ U ☐	Formaldehyde is not allowed in K-12 schools. Biology specimens stored in formaldehyde shall be decanted and preserved in a solution of 70 percent isopropyl alcohol or other equivalent solution. Formaldehyde disposal shall adhere to DOE regulations.		x	246-366-140 296-62-07540
K 060 S ☐ U ☐	Biology specimens shall be stored in sealed containers to prevent evaporation of liquid contents and resulting IAQ issues. Specimens preserved in hazardous or dangerous chemicals (alcohol, formalin, etc.) shall be stored in locked cabinets.		x	246-366-140 296-24-135 B-2 296-62-080 Part J

L. VOCATIONAL INSTRUCTION AREAS

		Recommended	Required	WAC or Other Code Reference
L 001 S ☐ U ☐	Reference should be made to the most current edition of the Safety Guide for Vocational, Trade and Industrial, and Technology Education, published by OSPI. This manual provides instruction and checklists for vocational education curriculum areas.	x		OSPI and DOH recommendation
L 002 S ☐ U ☐	Based on the OSPI manual and good safety practice, school shop teachers should pay close attention to students' personal protective equipment needs. Student-oriented safety training in vocational and arts and crafts hazards should be given, tested, and documented.	x		DOH recommendation
L 003 S ☐ U ☐	Floors shall be clean and kept free of oil and other slippery substances.		x	246-366-140 296-24-73503
L 004 S ☐ U ☐	Floors shall be free of obstacles so there are no slip, trip, or fall hazards. Hazard areas shall be plainly marked. In metal and wood shops, areas around equipment shall be marked with a two-foot safety zone. Projections shall be plainly marked.		x	246-366-140 296-24-13501 296-24-150 Part C
L 005 S ☐ U ☐	All power tools shall be safe, properly labeled, and protected with correct belts, guards, and electrical connections.		x	246-366-140 296-24-65501 & 15001 & 16501
L 006 S ☐ U ☐	Machine guarding shall meet WAC 296-24. Safety guards must be properly adjusted and functional for safe machine operation.		x	296-24 - 150 Part C 296-24-15001
L 007 S ☐ U ☐	Hand tools shall be properly maintained and kept in a safe condition.		x	246-366-140 296-24-65501
L 008 S ☐ U ☐	Safety stands (jack stands) shall be available and used correctly by students and staff.		x	246-366-140 296-24-67005
L 009 S ☐ U ☐	General operating instructions and safety reminder signs shall be posted on or near moving machinery and shop equipment.		x	246-366-140 296-24-135
L 010 S ☐ U ☐	Shop safety rules shall be displayed in plain view of room occupants.		x	246-366-140 296-24-020

L. VOCATIONAL INSTRUCTION AREAS

		Recommended	Required	WAC or Other Code Reference
L 011 S ☐ U ☐	Unstable equipment (e.g., drill presses, band saws, etc.) shall be secured to the floor or a table/stand to prevent tipping. Stand mounted equipment shall be fastened to the floor to prevent tipping.		x	246-366-140 296-24-15003
L 012 S ☐ U ☐	Materials (e.g., lumber, metal, etc.) shall be stored in a manner that will prevent personal injury. Proper storage shall be provided for metal stock as required by WISHA.		x	246-366-140 296-24-21503 296-24-078
L 013 S ☐ U ☐	All electrical panels, devices and connections shall be labeled and maintained in a safe condition.		x	246-366-140 296-24-95605
L 014 S ☐ U ☐	Hazardous and/or combustible waste shall not be allowed to accumulate. Such waste shall be removed from the shop area and properly disposed of as required by DOE regulations.		x	246-366-140 296-62-40009 296-155-020 173-303
L 015 S ☐ U ☐	Waste oil storage and disposal shall comply with DOE regulations. Oil spilled around storage barrels shall be cleaned up immediately. Containers need to be closed when not in use.		x	246-366-140 296-62-40009
L 016 S ☐ U ☐	A non-asbestos fire blanket shall be provided, identified, readily available, and visible to students and staff.		x	246-366-140 296-62-40009
L 017 S ☐ U ☐	Project storage shall be adequate and safe.		x	246-366-140 296-62-40025
L 018 S ☐ U ☐	Emergency eye wash stations shall be within 50 feet or ten seconds of all student work stations and shall provide 2.5 gpm for at least 15 minutes at 25 PSI or less. Bottled water eye wash stations do not meet the current WISHA and DOH requirements. They may be supplementary to units meeting the above specifications.		x	246-366-140 296-62-130
L 019 S ☐ U ☐	All grinders shall have proper tool rests and eye safety shields.		x	246-366-140 296-24-078
L 020 S ☐ U ☐	Eye protective devices (safety glasses, goggles, full-face shields) are identified, visible, readily accessible and used by students and staff.		x	246-366-140 296-24-70003 ANSI 2.87.1

L. VOCATIONAL INSTRUCTION AREAS

		Recommended	Required	WAC or Other Code Reference
L 021 S ☐ U ☐	Mechanical ventilation shall be provided for all arc and gas welding/cutting tables in order to prevent welding vapors from traveling through the breathing zone.		x	246-366-140 296-24-71503 296-24-71505
L 022 S ☐ U ☐	Welding curtains or shields shall be provided at booths and other welding areas.		x	246-366-140 296-24-69007 296-24-71501
L 023 S ☐ U ☐	Safety signs should be posted where needed; e.g., "turn on ventilation," "wear eye protection." L&I does not require signs; but when signs are utilized, uniform design, including wording, shape and color, are mandated.	x		246-366-140 296-24-135 B-2 296-24-14005,7,9
L 024 S ☐ U ☐	Master shut-offs shall be provided and identified for electricity and gas in all shop areas. A shut-off for water is recommended but not required.		x	246-366-140 296-24-110 A-4 296-24-16505
L 025 S ☐ U ☐	Compressed gas cylinders must be properly labeled, maintained, stored and secured, with caps in place, to prevent damage to the cylinder valve. Cylinder restraining devices must be adequate to prevent tipping and /or 'rocketing'. In-use cylinders must be secured either to a hand-truck or structure.		x	246-366-140 296-24-68201,3
L 026 S ☐ U ☐	The gas welding/cutting area shall comply with state fire code and WISHA requirements. Eye protection shields shall be provided.		x	246-366-140 296-24-680 Part I 296-24-68507
L 027 S ☐ U ☐	All flammable liquids shall be stored in UFC and NFPA approved flammable storage cabinets with self-closing doors. Flammable wastes must be disposed of in approved flammable waste containers. Cabinets shall be locked or located in a locked room when not in use.		x	246-366-140 296-24-33009 UFC 79.0258
L 028 S ☐ U ☐	All solvents for parts cleaning shall be stored in approved containers. Class 1 flammable liquids shall not be used. Fusible links on solvent tank lids shall be in place and shall operate as designed.		x	246-366-140 296-24-33009 296-24-40507
L 029 S ☐ U ☐	Wood burning stoves shall not be used in school buildings.		x	246-366-140
L 030 S ☐ U ☐	Flammable finish areas and paint spray rooms shall have approved ventilation, filters, lighting, storage cabinets, and separation from other rooms.		x	246-366-140 296-24-370 UFC

S=Satisfactory
U=Unsatisfactory

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L. VOCATIONAL INSTRUCTION AREAS

		Recommended	Required	WAC or Other Code Reference
L 031 S U ☐ ☐	Filters in the paint spray booth/room shall be changed or cleaned as required.		x	246-366-140 296-24-370 UFC
L 032 S U ☐ ☐	Only Class 1 electrical, explosion-proof lights, fan or other electrical devices shall be allowed in flammable finish areas.		x	246-366-140 296-24-370 UFC
L 033 S U ☐ ☐	Ventilation and exhaust systems shall be installed in all shop areas in compliance with L & I WISHA rules.		x	246-366-140 296-62-11003
L 034 S U ☐ ☐	Chip and sawdust collection systems shall be installed in all wood shops.		x	246-366-140 296-62-11003
L 035 S U ☐ ☐	Non-skid surfacing shall be used within the operator use zone of all stationary equipment.		x	OSPI Vocational Safety Guide 296-24-15005

S=Satisfactory
U=Unsatisfactory

M. EXPOSURE CONTROL PLAN (ECP) BLOODBORNE PATHOGENS (BBP)

		Recommended	Required	WAC or Other Code Reference
M 001 S ☐ U ☐	The school's written Exposure Control Plan (ECP) and the WISHA Bloodborne Pathogen (BBP) standard apply to employees, including student employees and students acting in the capacity of employees.		x	392-198 296-62-08001
M 002 S ☐ U ☐	Many ECP and BBP provisions also apply to all students. WIAA has adopted rules for athletic activities based on the BBP standard. This applies school-wide with particular emphasis in the athletic department.		x	WIAA
M 003 S ☐ U ☐	The ECP shall include precautions to prevent injuries in handling needles and other sharps. Reporting procedures for needle stick and other sharps injuries and other potential exposures shall also be included. See definition of "sharps" in WISHA BBP regulation (WAC 296-62-0800).		x	392-198 296-62-08001
M 004 S ☐ U ☐	The ECP shall address proper precautions to be taken while cleaning blood and other body fluid spills, and laundry practices involving risk of direct exposure to body fluids.		x	392-198 296-62-08001
M 005 S ☐ U ☐	The ECP shall address disposal and/or decontamination of potentially contaminated items.		x	392-198 296-62-08001
M 006 S ☐ U ☐	The ECP shall address training responsibility and record keeping requirements.		x	392-198 296-62-08001
M 007 S ☐ U ☐	Hand washing facilities shall be readily accessible. Antiseptic hand cleansers/towelettes shall be available when hand washing facilities are not available.		x	392-198 296-62-08001
M 008 S ☐ U ☐	Hands shall be washed following glove removal and before eating or drinking.		x	392-198 296-62-08001
M 009 S ☐ U ☐	Protective gloves (PVC or latex) and appropriate Personal Protective Equipment (PPE) shall be readily available and shall be used during exposure to potentially infectious materials. Disposable gloves shall not be reused.		x	392-198 296-62-08001
M 010 S ☐ U ☐	Reusable utility gloves shall be inspected for defects and decontaminated after every potential exposure to body fluids. Gloves shall be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.		x	392-198 296-62-08001

M. EXPOSURE CONTROL PLAN (ECP) BLOODBORNE PATHOGENS (BBP)

		Recommended	Required	WAC or Other Code Reference
M 011 S ☐ U ☐	A policy to assure prompt disinfection of contaminated surfaces and receptacles with a recommended disinfectant shall be in effect.		x	392-198 296-62-08001
M 012 S ☐ U ☐	Wrestling, weight lifting, and gymnastic equipment shall have an unbroken surface that is easily cleanable. Small tears may be repaired with tape. All tears shall be repaired daily.		x	392-198 296-62-08001
M 013 S ☐ U ☐	Containers for contaminated sharps shall be closable, puncture resistant, and leak proof on sides and bottom. Containers shall be labeled as a bio-hazard, easily accessible to users, and maintained upright for use.		x	392-198 296-62-08001
M 014 S ☐ U ☐	Other regulated waste containers shall be closable, able to contain contents, leak proof, labeled as bio-hazard, closed prior to removal, and disposed of in accordance with regulations.		x	392-198 296-62-08001
M 015 S ☐ U ☐	Gloves and other appropriate PPE shall be worn when handling contaminated laundry. Contaminated materials shall be bagged/contained at the location where used in leak proof laundry bags or containers and labeled appropriately.		x	392-198 296-62-08001
M 016 S ☐ U ☐	Contaminated laundry (athletic uniforms and towels) shall be laundered in accordance with WISHA regulations.		x	392-198 296-62-08001
M 017 S ☐ U ☐	BBP training shall be provided to all potentially exposed employees within ten days of initial assignment and at least annually thereafter. Training shall also be provided when employees change assignments and/or procedures.		x	392-198 296-62-08001
M 018 S ☐ U ☐	BBP training shall include an explanation of the employer's Exposure Control Plan and shall include an opportunity for interactive questions with a person knowledgeable in the field of bloodborne pathogens.		x	392-198 296-62-08001
M 019 S ☐ U ☐	BBP training shall include modes of transmission, recognition of tasks and procedures which involve potential exposures, information on HBV vaccinations, details of emergency response for exposure incidents, post-exposure evaluations, and explanations of all signs, labels and/or color coding.		x	392-198 296-62-08001
M 020 S ☐ U ☐	BBP training records shall include training dates, a summary of training contents, and names and qualifications of all trainers along with the names and job titles of all persons trained. Records shall be maintained for three (3) years. All medical and training records shall be available upon request to L & I.		x	392-198 296-62-08001 (8)

M. EXPOSURE CONTROL PLAN (ECP) BLOODBORNE PATHOGENS (BBP)

		Required	Recommended	WAC or Other Code Reference
M 021 S ☐ U ☐	Medical records shall be kept for each exposed employee, including name and social security number, and shall include a copy of the employee's Hepatitis B vaccination status and related information.		x	392-198 296-62-08001 (8)
M 022 S ☐ U ☐	The school district shall develop procedures to ensure confidentiality.		x	392-198 296-62-08001 (8)

N. PLAYGROUNDS

		Recommended	Required	WAC or Other Code Reference
N 001 S ☐ U ☐	Consumer Product Safety Commission (CPSC) guidelines should be followed for all K-12 playgrounds. The complete CPSC guidelines may be downloaded from the CPSC web site at www.cpsc.gov.	x		CPSC recommendation
N 002 S ☐ U ☐	The American Society of Testing Materials (ASTM) established standards for playground equipment manufacturers in 1995. While the ASTM is voluntary, school administrators should not consider purchasing any new equipment that does not meet this standard.	x		ASTM F-1487-95 (or most current version)
N 003 S ☐ U ☐	While these ASTM standards and CPSC guidelines will not specifically address all older playground equipment (e.g., pre-1981 equipment), the general concepts and guidance is applicable to all playground equipment (i.e., pinch-points, strangulation hazards, equipment height, surfacing, etc.).	x		CPSC ASTM F-1487-95 (or most current version)
N 004 S ☐ U ☐	Surfacing should meet ASTM standards and CPSC guidelines	x		CPSC ASTM F- 1292-91 (or most current version)
N 005 S ☐ U ☐	Soccer goals should be anchored to prevent tipping as per CPSC guidelines and ASTM standards.	x		CPSC ASTM -PS-75-99

O. ANIMALS IN THE CLASSROOM

		Recommended	Required	WAC or Other Code Reference
O 001 S ☐ U ☐	Parents should be notified if any live or dead animal is to be kept in their child's classroom. Children who have allergies or asthma may react unfavorably to exposure. Feces, urine, fur, feathers, preservatives and feed may adversely affect indoor air quality (IAQ) if allowed into a classroom.	x		DOH recommendation
O 002 S ☐ U ☐	Keeping and handling of live animals in classrooms shall be in a designated area only. Designated areas shall include impervious cleanable surfaces with spot ventilation directly to the outside of the building.	x		DOH recommendation
O 003 S ☐ U ☐	Cages should be lockable and should be cleaned daily by staff or supervised students.	x		DOH recommendation
O 004 S ☐ U ☐	Handling of live animals should only be allowed under adult supervision. Sturdy, bite-resistant gloves are recommended whenever live animals are handled.	x		DOH recommendation
O 005 S ☐ U ☐	Hand washing facilities should be provided and readily accessible. Hands should always be washed with soap and warm water after handling animals, cages, bedding, etc.	x		DOH recommendation
O 006 S ☐ U ☐	Animals that are kept in the classroom should be fed appropriate food on a regular basis and be provided with fresh water at all times to prevent animal illness, disease, or death.	x		DOH recommendation
O 007 S ☐ U ☐	Heat lamps should be secured in such a way as to prevent contact with flammable beding materials. Electrical connections shall meet the National Electrical Code (NEC). Extension cords are not allowed for permanently installed heat lamps.	x		NEC DOH recommendation
O 008 S ☐ U ☐	Only animals, mammals, birds, fish and reptiles bred in captivity should be allowed in schools due to the wide variety of diseases carried by "wild" animals, mammals, fish and reptiles. Animals must have current vaccinations appropriate to the species. Consult the State Department of Agriculture for requirements.	x		DOH recommendation
O 009 S ☐ U ☐	Fish aquariums should be cleaned regularly. Used water from aquariums should be disposed of in sinks that are not used for food preparation or for obtaining water for human consumption.	x		DOH recommendation
O 010 S ☐ U ☐	Schools shall provide legally-required animal bite reports to local health jurisdictions.		x	WAC 246-400-196

O. ANIMALS IN THE CLASSROOM

		Recommended	Required	WAC or Other Code Reference
O 011 S ☐ U ☐	Ensure that all classroom animals are properly cared for on weekends, holidays and breaks. Dead, sick, or diseased animals or filthy (mold, dirt, feces, etc.) cages/aquariums degrade the indoor air quality and are not conducive to a healthy classroom environment.	x		DOH recommendation
S ☐ U ☐ N A	**Note:** Animals in the classroom are a common cause of indoor air quality problems. If adverse IAQ is a concern, remove all animals from the school until the issue is adequately addressed.			DOH recommendation
O 012 S ☐ U ☐	Parrots, love birds, parakeets and other 'hookbilled' birds shall be prohibited in public schools as per WAC 246-100-176 and 246-100-201.		x	WAC 246-100-176 and 246-100-201.
O 013 S ☐ U ☐ N A	Refer to Appendix F for additional recommendations concerning safety and health issues dealing with animals.	x		DOH recommendation
O 014 S ☐ U ☐	Petting zoos, classroom exhibits and other animal contacts both inside and outside of the classroom should include handwashing facilities with soap and running water, restrict consumption of all food and drinks in areas where animals are present and always require adult supervision.	x		DOH recommendation

P. DISASTER PREPAREDNESS AND EMERGENCY PROCEDURES

		Recommended	Required	WAC or Other Code Reference
P 001 S ☐ U ☐	Each school building shall have an emergency plan in place which includes plans for evacuations, lock-downs, and shelter-in-place procedures.		x	UFC 1303.3.1 UFC 1303.3.3
P 002 S ☐ U ☐	Schools shall conduct emergency evacuation (fire) drills at least monthly during the school year. School administrators should consult with their local fire department and county emergency services coordinator for local requirements. Annual review and update of the evacuation plan is required.		x	UFC 1303.3.3.2 UFC 1303.4.3
P 003 S ☐ U ☐	Evacuation routes shall be posted in each classroom as well as in all non-classroom, non-student areas.		x	UFC 1303.4
P 004 S ☐ U ☐	Teachers shall be aware of their responsibilities during an emergency or drill as specified in the local school's emergency evacuation plan.		x	UFC 1303.5
P 005 S ☐ U ☐	Building administrators shall be aware of their WISHA-mandated responsibilities to their employees, as well as their responsibilities to their students, in the event of an actual emergency.		x	WAC 296-24-567 WAC 296-24-500
P 006 S ☐ U ☐	Training shall be provided to staff and students to comply with the school's emergency evacuation plan.		x	UFC 1303.3.3.1
P 007 S ☐ U ☐	Evacuation assembly areas shall be away from public streets and shall be clear of paths of responding emergency vehicles.		x	UFC 1303.3.1
P 008 S ☐ U ☐	One or more persons shall be assigned to search the building as the building is evacuated.		x	UFC 1303.3.4.1
P 009 S ☐ U ☐	A written record of each emergency drill should be kept, noting the time taken to evacuate the building and the time necessary for emergency response to reach the building.		x	UFC 1303.6.4
P 010 S ☐ U ☐	Each school should have an administrator contact their local county emergency services coordinator for information on the use of school facilities and resources in the event of an emergency or disaster.	x		DOH recommendation

P. DISASTER PREPAREDNESS AND EMERGENCY PROCEDURES

		Recommended	Required	WAC or Other Code Reference
P 011 S ☐ U ☐	Each school administrator should have access to a copy of their local county emergency plan.	x		DOH recommendation
P 012 S ☐ U ☐	School administrators should be prepared if an emergency requires students/staff to stay in the building for a prolonged period of time; e.g., overnight. Disaster officials recommend sufficient supplies for a 72-hour period.	x		DOH recommendation
P 013 S ☐ U ☐	Each school district and school should have a disaster plan specifically designed for each building which is coordinated with the local county disaster plan.	x		DOH recommendation
P 014 S ☐ U ☐	Schools shall have an employee emergency and fire prevention plan.		x	WAC 296-24-567 WAC 296-24-500

Q. INDOOR AIR QUALITY (IAQ)

		Required	Recommended	WAC or Other Code Reference
Q 001 S ☐ U ☐	The Environmental Protection Agency (EPA) published "Building Air Quality" in December 1991. It is a guide for building owners and facility managers to diagnose, mitigate and prevent IAQ problems.	x		EPA recommendation
Q 002 S N U A	Information on heating, ventilation and air conditioning (HVAC) operations and maintenance is included in EPA's " Building Air Quality" along with appendices on IAQ measurements, forms and IAQ checklists. This manual is a 'must' for school IAQ maintenance staff.	x		DOH recommendation
Q 003 S N U A	The Environmental Protection Agency published the " IAQ, Tools For Schools, Action Kit" in September 1995. It is a guide for IAQ coordinators, health officers, teachers, administrators and school support staff. It includes an IAQ problem solving wheel, coordinators guide, forms, checklists, and a short video tape.	x		EPA recommendation
Q 004 S N U A	DOH and OSPI published the "School IAQ Best Management Practices Manual" (IAQ-BMP)in February 1995. It can be downloaded from the DOH web site at www.doh.wa.gov under "publications." This guide should be consulted by school staff, designers, teachers, government agencies, and parents.	x		DOH recommendation
Q 005 S N U A	The IAQ-BMP should be adhered to by schools. Use of pesticides by individual teachers should not be permitted. Notification provisions prior to application are of particular importance. Pesticide applications should be by licensed applicators, or under their supervision.	x		DOH recommendation

Appendix A
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Appendix B
School Inspection Protocols

School and health officials have agreed that there is a need for standardization in the way that schools are approached and inspected by local health agencies. The following inspection protocol was drafted by the School Facilities Health and Safety Advisory Committee as an attempt to resolve the issues of: 1) being inspected by health departments without established protocols; 2) lack of cooperation between schools and health agencies; and 3) improving the communication of inspection findings.

Recommended Inspection Procedure

1. First meeting with school district.

At the direction of the school superintendent, meet with the school district designee(s) and establish an initial point of contact (person) for future meetings, communications and correspondence. At this meeting the health inspector should share the forms, rules and guidelines as well as any administrative procedures that will impact the schools. Sample letters and reports may be shared to let the schools know what to expect. Schools may share facilities plans, current and long-range plans, budget constraints, local priorities, and examples of inspection reports performed by other agencies/entities including self-inspection reports.

2. Schedule inspections.

In order to accommodate the different needs and situations that exist in different school districts, it is suggested that health agencies work cooperatively through the district contact person to establish an appropriate inspection schedule. The schedule should establish dates, times and approximate duration that may be needed for each inspection. It is important that this be done for several reasons including; developing trust, increasing the level of communication between health agency and school district personnel, sharing technical expertise, and appropriate interaction when dealing with problem areas that arise.

3. Establish site contacts.

Once district contact is established it is important to similarly establish contacts at each school facility. Each school will have different circumstances that will govern access to various areas of the buildings at different times of the day. In addition, having a site person along on an inspection may not be convenient on a given day, due to schedule conflicts, illnesses or other circumstances. The school contact may be a principal, safety representative, custodian or other staff representative.

4. Perform the inspection.

Using a form and supporting documentation agreed to in advance, the health inspector should perform a routine inspection, a comprehensive inspection, a targeted inspection, or a follow-up inspection, as needed and appropriate. The school district and school contacts

should be informed in advance as to which type of inspection they are receiving in order to know what to expect in the inspection report.

5. Have a closing conference.

The closing conference allows the health official and school district to review the results of the inspection together and understand what action might be taken by the health official regarding any findings. The health official may also be able to assist the district with problem solving and prioritization.

Reports should distinguish between non-compliance with existing regulations, such as WAC 246-366 as opposed to recommendations, such as those of the Consumer Product Safety Commission. Items that do not conform to recommendations should not be listed as "violations" or "citations". Reports should identify the item in question and that it does not conform to the recommendation. For WAC or RCW violations, cite to the code section.

6. Draft inspection report.

Once the school facility has been inspected a report labeled "DRAFT" should be written. This will identify it as being different from the subsequent "FINAL" report. In accordance with the inspection procedure that has been agreed upon in advance with the school district, transmit a copy of draft report to the school district contact person(s). The school district will prepare responses to each of the items that have been noted. Be aware that schools are sensitive to terminology, and that the word "violation" is sometimes misused to apply to non-conformance with a "recommendation" which may not be expressly incorporated into the board of health rules. It is important to distinguish "violations" from other items which may only be discrepancies or not in conformance with various recommendations. Draft copies of reports should only be sent to the school districts and must not be forwarded to others.

7. Review the school district's comments.

The health official and the school district will have already agreed to a time frame for review of the draft reports. Some districts will want the report for each school submitted together while others may prefer to have the reports submitted as they are completed. In either case, working with the school district is critical so that communication is maintained in a positive and open fashion.

The health official and the school district may wish to meet in person or by telephone to review the draft reports and discuss areas of agreement as well as disagreement or misunderstanding. This meeting should also allow both parties to explain their intentions and priorities. It is of considerable value to the health official to allow the school district to propose reasonable timelines to correct problems that are found during the inspection. This allows schools to work within the available public funding budgets at their disposal and identify any budget line items that may be required in the future.

8. **Issue the final report.**

The final report should be addressed to the school district board of directors and district superintendent in accordance with the board of health rules {WAC 246-366-040(2)(b)}. In addition, it is highly recommended that the report be copied to the school district contact person, since this will be the person who will be responsible for working with the health official and addressing the items noted in the report. These details should be worked out at the first meeting between the school district and the health official so there are no "surprises" to the school district.

9. **Follow-up reports.**

At such time as the school district and the health official agree, a follow-up inspection should be done to identify which items have been corrected and which have not. A follow-up report should recognize the school district's progress on each issue they have corrected or addressed as well as noting areas, which still do not conform to established regulations or recommendations. Timelines may need to be revised by the school district, with input from the health agency on priority items, for matters that have not been corrected. In this way, the health official's reports may be of assistance to school district staff in presenting funding needs to school district decision-makers and others.

Recommended Report Format

1. **General Introduction**. Should describe the focus (general or targeted areas) and purpose of the inspection and cite the authority under which the inspection is being conducted.

2. **Report findings**. Describe the problem found by item number, where it is located on the premises, and reference the problem to a regulation or recommendation that pertains to it. The findings may be discussed in narrative fashion if desired.

3. **Make recommendations**. Recommendations may be centered around facilities repairs and improvements or focus on process and operational suggestions.

4. **Prioritize issues**. Some items identified during the inspection may have been corrected by the time the report is issued while other items may be expensive and require long-range planning and funding efforts to resolve. Other items may pose serious risks for accidents or health problems. Some items pose a lower risk of health and safety problems than others but are still important to the health official for prioritizing.

5. **Identify any follow-up inspection date**. Dates for any follow-up inspection(s) should be set for documenting progress on the items identified on the inspection report.

Frequency of Inspections

In the original regulation, the board of health required annual inspections for school buildings. Since then, DOH has continued to recommend annual inspection although the requirement states "periodic" inspections.

Several health officials have agreed to inspect school facilities every two or three years provided there are site-based safety committee inspections, follow-up inspections by the health official in the alternate years, and coordination, report-sharing, and cross-training between health officials and school districts.

The School Facilities Health and Safety Advisory Committee supported either an annual inspection or a two to three year frequency with some additional coordination in alternate years. There was also discussion about performing inspections to investigate complaints or respond to school requests. The committee agreed that it was appropriate for health officials to inspect schools under these circumstances.

Appendix C
School Inspection Roles and Responsibilities

Area	Agency	New Construction/ Remodel	Routine Inspection	Complaints/ Emergency Response	Statute(s) Citations(s)	Regulation(s) or other Citation(s)
Plan Review and Construction	SD	Develops proposal, site safety, noise, building materials, lighting ventilation, surfaces, environmental hazards	SD—any modifications or changes	SD respond Depends on what is needed		WAC 246-366-040
	SBOH	Rules for K–12 schools			RCW 43.20	WAC 246-366
	LHD	Site safety, noise, building materials, lighting ventilation, surfaces, environmental hazards, plans review, water adequacy, onsite sewage	Post-construction pre-occupancy	LHD - child safety and IAQ problems	RCW 70.05 RCW 19.27.097	WAC 246-366 & Growth Mgmt
	LBO	Structural plans, plans review/permits	During construction	Risk Mgr—loss control		(UBC, UMC, UPC, NEC, ASHRAE, local)
	PUD	Sewer/water hook-up, water, sewer, storm water run-off	During construction	L&I—worker safety and IA		
	SPI	Value eng.	N/A			
	AQA	Dust/asbestos removal Owner's project manager, dust	As needed Daily to weekly			
	L&I	Electrical plan reviews Electrical installations Boilers Modular offices and classrooms Elevators and lifts Asbestos removal			RCW 19.28 RCW 19.28 RCW 70.79 RCW 43.22 RCW 70.87	WAC 296-46-140 WAC 296-46 WAC 296-104 WAC 296-150 WAC 296-81, -82, -84, -85, -87, -93 WAC 296-65
	WSP (State Fire Marshal)	Plan review for all E-1 occupancies	Construction inspections (May delegate construction inspection to local jurisdictions.)		RCW 19.27	
	Fire	Plans review/permits (UFC-Auto Spk Sys, Alarm Sys, Range Hood Ext. Sys, Fire Ext)				
	EPA					AHERA
	DOE	Waste disposal, hazardous materials				
Land Use	Planning	SEPA/zoning				
	DOE	Hazardous materials		SD—respond		
	SD	Develops proposal	SD—changes in facility programs	INS—claims		
	Lenders	Environmental clearance				
	LHD	Site approval		Noise		
Water Supply	LHD LHD	Small system approval Well drilling start notice (some areas) Well site approval	LHD—routine samples Sanitary Survey	LHD—correction notices Bacteria testing First response	RCW 70.05 RCW 19.27	WAC 246-291 WAC 246-366-060 Local rules WAC 246-290
	DOH	Larger system approval	Annual Operating Permit	DOH—correction notices		Lead Contamination Control Act WAC 246-294 WAC 246-290

Appendix C
School Inspection Roles and Responsibilities (continued)

Area	Agency	New Construction/ Remodel	Routine Inspection	Complaints/ Emergency Response	Statute(s) Citations(s)	Regulation(s) or other Citation(s)
Water Supply (continued)	PUD	Existing water supply	Fire sprinkler hydrant inspection			
	DOE	Water rights			RCW 90.44	WAC 178-160
	DOE	Well drilling start notice	PUD—samples LHD—Construction Inspection (some areas)	PUD—responds, tests	RCW 18.104	WAC 178-160
	SD	Develops proposal	Facilities staff	SD—responds, tests		
	Fire	Volume requirements,				UFC
	Water District/ DOH	Potable water, supply and delivery				WAC 246-290
	EPA					Safe Water Drinking Act
	SPI					Lead in School Drinking Water
Waste Management	LHD	Smaller on-site Larger onsite by agreement with DOH Initial site evaluation Final construction	LHD—O&M permits	LHD—repair permits Complaint response	RCW 70.05	WAC 246-272 WAC 246-366-070 Local health rules
	DOH	Larger on-site	DOH—O&M permits	DOH—repair permits		
	DOE	NPDES permits	DOE—periodic renewals	DOE - violations		
	PUD	Existing system		SD—corrects problems		
	SD	Develops proposal	SD and Insurance - Loss Control	Complaints, emergency response, claims SD and Insurance - Claims		
Food Service	LHD	Plan review	LHD—routine inspection	LHD—illness investigation	RCW 70.05	WAC 246-215 WAC 246-366-130 Local rules
	SD	Develops proposal	SD—routine inspection	SD—claims		
			INS—routine inspection (Loss control)	INS—claims		
Playground	LHD	Plan review	LHD—routine inspection	LHD	RCW 70.05	WAC 246-366-140
	SD/PTA	Varies Insurance—Loss Control, Facilities review, develops proposal	SD and Insurance—Loss Schools—self inspect	Maintenance and safety SD and Insurance - Claims		
	Parents	Advocate for children	Parents inspect	Initiate if knowledgeable	Parental duty	
	CPSC					Guidelines
	DOH	Train LHDs	Train LHDs			
Shop Safety	LHD	See plan review	LHD routine inspection	LHD - children's safety Students	RCW 70.05	WAC 246-366-140
	L&I	N/A	L&I—N/A	L&I—adult safety Employees (teachers)		
	SD	Develops proposal	SD & INS—Loss Control	SD & INS - claims		
Chemicals	LHD	See plan review	LHD—routine inspection –children	LHD—spill response Storage	RCW 70.05	WAC 246-366-140 WISHA standard, BMP-IAQ manual, Poisonous plant guide
	DOE		L&I—inspection—teacher safety	DOE—spill response Waste disposal		
	L&I		Inspects and consults for workers	Investigates before/ after injuries		WISHA Std.
	SD	Develops proposal	SD and INS—Loss Control	Fire—spill response SD and INS—claims		

Appendix C
School Inspection Roles and Responsibilities (continued)

Area	Agency	New Construction/ Remodel	Routine Inspection	Complaints/ Emergency Response	Statute(s) Citations(s)	Regulation(s) or other Citation(s)
Chemicals (cont.)	OSPI					Science Teachers Guide, 1984
Fire Safety	LBO	Fire protection plan	LBO—routine inspection sprinklers/extinguishers/ exits		RCW 28A.305.130	
	SD	Develops proposal	SD and INS—Loss Control	SD and INS—claims Emergency response		
	Fire	Fire protection plan (see LBO)	See LBO	Investigates		UFC
	L&I		Inspects	Responds to complaints		WISHA
Ventilation	LHD	Plan review	Inspects	Responds to complaints	RCW 70.05	WAC 246-366-080
	L&I		Inspects	Responds to complaints		WISHA
	LBO					Mechanical code UMC, ASHRAE Std
	SD	Develops proposal	SD—maintenance and repairs	SD and INS—claims		
Air Quality	AQA	Permits	SD—routine monitoring	AQA—emissions		
	SD	Develops proposal	SD—maintenance and repairs	IAQ complaints Insurance—Loss Control review		
	L&I		Inspects	Responds to complaints—workers		WISHA
	DOH			Assist LHDs and SDs	RCW 43.20	WAC 246-366-080
	LHD	Plan review		IAQ complaints—children	RCW 70.05	WAC 246-366-080
				SD and INS—claims		
Lighting	SD	Develops proposal	SD—general maintenance and repairs	SD and INS—claims Insurance—Loss Control		WAC 246-366-120
	LHD	Plan review	LHD—routine inspections—children	Complaint response—students	RCW 70.05	WAC 246-366
	L&I	Electrical permits	Inspections—workers	Complaint response—children		Workplace standards
	LBO	Plan review				UBC Standards
Transportation	SD	Develops proposal	SD and INS—review program and inspect	SD and INS—claims and complaints		
	WSP		WSP safety			
Other	SD		Regular survey	INS—claims		
	L&I -		Boiler inspections			
	INS		State required inspections			
Premises	LHD	Site review, plan review and pre-occupancy inspection	Periodic inspection	Respond to complaints	RCW 70.05	WAC 246-366
	SD	Develops proposal	SD and INS—review program and inspect	SD and IINS—claims and complaints		
Indoor Air (See air quality and ventilation)	AQA			Local air pollution authority		
	LBO					UMC, ASHRAE
	Fire			Smoke control		
	LHD			LH—complaints	RCW 70.05	
	LHD/DOH	Review plans	LHD routine inspection	LHD complaints	RCW 70.05	WAC 246-260

Appendix C
School Inspection Roles and Responsibilities (continued)

Area	Agency	New Construction/ Remodel	Routine Inspection	Complaints/ Emergency Response	Statute(s) Citations(s)	Regulation(s) or other Citation(s)
Swimming Pools (cont.)	SD		SD—regular survey	SD—claims and complaints		
Portables	L&I	Modular offices and classrooms Permits/approval LHD plan/site approval	LHD routine inspection		RCW 43.22 RCW 70.05	WAC 296-1508 WAC 246-366
Workplace Safety and Health	L&I		ALL workers Employees under age 18 (excluding agricultural child labor)	L&I investigation	RCW 49.12, 49.46, and 49.52.060	WAC 296-24, -27, -36, -44, -62, -63, -155, -303, WAC 296-126
	SD	Develops plans	Risk Management/INS inspection	SD accident investigation		
Radon (E and SW WA)	EPA		Education materials			
	LHD	Some EW counties advise		Complaints		
	SD		Testing for levels	Complaints		
	L&I					
Lead	DOH/LHD		Childhood lead screening			
	SD					
	EPA		Environmental lead			
	WISHA		Occupational exposures			

Index:

LHD - Local health jurisdiction
LBO - Local building official/fire marshal
L&I - State Department of Labor and Industries
DOH - State Department of Health
DOE - State Department of Ecology
PUD - Any local utility district/municipal utility
AQA - Air quality agency (regional or local)
OSPI - Office of Superintendent of Public Instruction
Planning - Local city/county planning agency
Fire - Local fire department
DOT - State Department of Transportation
SD - School or ESD risk manager or business manager or facilities manager
INS - Private insurance carrier's loss control/claims
WSP - Washington State Patrol

Appendix D
Science Laboratory Chemicals

Table 1
DOH–OSPI list of chemicals deemed unsuitable for use in K–12 schools due to excessive risk that exceeds educational utility

Chemical Name	Hazards
Acetic Anhydride	Explosive potential, corrosive
Acetyl Chloride	Corrosive, dangerous fire risk, reacts violently w/ water and alcohol
Acrylamide	Toxic by absorption, suspected carcinogen
Acrylonitrile	Flammable, poison
Adipoyl Chloride	Corrosive; absorbs through skin, lachrymator (causes tears)
Ammonia, gas	Corrosive lachrymator
Ammonium Bifluoride	Reacts with water, forms hydrofluoric acid
Ammonium Bichromate	May explode on contact with organics, suspected carcinogen
Ammonium Chromate	Oxidizer, poison; may explode when heated
Ammonium Dichromate	Reactive, may cause fire and explosion
Aniline	Carcinogen, toxic, absorbs through skin
Aniline Hydrochloride	Poison
Antimony Oxide	Health and contact hazard
Antimony Powder	Flammable as dust, health hazard
Antimony Trichloride	Corrosive, emits hydrogen chloride gas if moistened
Arsenic compounds	Poison, carcinogen
Asbestos, Friable	Inhalation health hazard, carcinogen
Azide Compounds	Explosive in contact with metals, extremely reactive, highly toxic
Barium Chromate	Poison, carcinogen
Benzene	Flammable, carcinogen
Benzoyl Peroxide	Organic peroxide, flammable, explosive oxidizer
Beryllium and its compounds	Poison, dust is P-listed & highly toxic, carcinogen
Cadmium compounds	Toxic heavy metal, carcinogen
Calcium Fluoride (Fluorspar)	Teratogen, emits toxic fumes when heated
Carbon Disulfide	Flammable, toxic, P-listed
Carbon Tetrachloride	Toxic, carcinogen
Chloral Hydrate	Hypnotic drug, controlled substance
Chlorine	Poison gas, corrosive
Chlorobenzene	Explosive limits 1.8% to 9.6%, toxic inhalation and contact hazard
Chloroform	Carcinogen, if old forms deadly Phosgene gas

Table 1 (continued)
DOH–OSPI list of chemicals deemed unsuitable for use in K–12 schools due to excessive risk that exceeds educational utility

Chemical Name	Hazards
Chlorosulfonic Acid	Toxic also known as sulfuric chlorohydrin
Chromic Acid	Strong oxidizer, poison
Collodion	Flammable, explosive when dry, nitrocellulose compound
Cuprous Cyanide	Toxic
Cyanogen Bromide	Poison, strong irritant to skin and eyes
Cyclohexene	Flammable, peroxide former
Dichloroethane	Flammable, toxic
Dinitro Phenol	Explosive
Dinitrophenyl Hydrazine	Severe explosion and fire risk
Dioxane	Flammable, peroxide former
Ether, Anhydrous	Flammable, peroxide former
Ether, Isopropyl	Flammable, peroxide former
Ethylene Dichloride	Toxic, contact hazard, dangerous fire risk, explosive in air 6-16%
Ethyl Nitrate	Explosive
Ethyleneimine	Flammable, toxic, P -listed
Ferrous Sulfide	Spontaneously ignites with air if wet
Formaldehyde (Formalin)	Toxic, carcinogen, sensitizer
Gunpowder	Explosive
Hydrazine	Flammable, absorbed through skin, carcinogen, corrosive
Hydriodic Acid	Corrosive, toxic
Hydrogen Sulfide, gas	Poison, stench, very toxic
Isopropyl Ether	Flammable, highest-risk peroxide former
Lithium Aluminum Hydride	Flammable, reacts with air, water, and organics
Lithium Metal	Reacts with water and nitrogen in air
Mercaptoethanol	Flammable, corrosive, intense stench
Mercury compounds	Poisonous heavy metal
Methylene Chloride	Toxic, carcinogen, narcotic
Methyl Ethyl Ketone	Flammable, dangerous fire risk, toxic
Methyl Iodide (Iodomethane)	May be a narcotic, carcinogen, lachrymator.
Methyl Isocyanate	Flammable, dangerous fire risk, toxic
Methyl Isopropyl Ketone	Toxic
Methyl Methacrylate	Flammable, vapor causes explosive mix with air

Appendix D
Science Laboratory Chemicals (continued)

Table 1 (continued)
DOH–OSPI list of chemicals deemed unsuitable for use in K–12 schools due to excessive risk that exceeds educational utility

Chemical Name	Hazards
Naphthylamine, a-	Combustible, toxic, carcinogen.
Nickel Oxide	Flammable as dust, toxic, carcinogen
Nicotine	Poison, P-listed
Nitrilotriacetic Acid	Corrosive
Nitrobenzene	Highly toxic
Nitrocellulose	Flammable, explosive.
Nitrogen Triiodide	Explosive.
Nitroglycerin	Explosive.
Osmium Tetraoxide (Osmic Acid)	Highly toxic, P-listed
Pentachlorophenol	Extremely toxic
Perchloric Acid	Powerful oxidizer, reactive
Phosphorus Pentasulfide	Water reactive, toxic, incompatible with air and moisture
Phosphorus Pentoxide	Oxidizer, toxic
Phosphorus, Yellow or White	Air reactive, poison.
Picric Acid, Trinitrophenol	Explosive when dry
Potassium Chromate	Oxidizer, toxic
Potassium Dichromate	Powerful oxidizer, carcinogen
Potassium Cyanide	Poison, P-Listed
Potassium Sulfide	Flammable, may ignite spontaneously.
Potassium, metal	Water reactive, peroxide former (orange fog/crystals)
Pyridine	Flammable, toxic, vapor forms explosive mixture with air
Selenium	Toxic
Silver Cyanide	Extremely toxic
Sodium Arsenate	Toxic
Sodium Arsenite	Toxic
Sodium Azide	Poison, explosive reaction with metals, P-listed
Sodium Borohydride	Flammable solid, water reactive
Sodium Chromate	Oxidizer, carcinogen
Sodium Cyanide	Poison, P-Listed
Sodium Fluoride (Bifluoride)	Highly toxic by ingestion or inhalation, strong skin irritation

Table 1 (continued)
DOH–OSPI list of chemicals deemed unsuitable for use in K–12 schools due to excessive risk that exceeds educational utility

Chemical Name	Hazards
Sodium Fluoroacetate	Toxic, deadly poison
Strontium	Flammable, store under naptha, reacts with water.
Testosterone HCl	Controlled substance
Tetrahydrofuran	Flammable, peroxide former
Thioacetamide	Toxic, carcinogen, combustible.
Thionyl Chloride	Corrosive
Thiourea	Carcinogen
Titanium Trichloride	Flammable, fire risk.
Triethylamine	Flammable, toxic, irritant
Trinitrobenzene	Explosive
Trinitrotoluene	Explosive

Appendix D
Science Laboratory Chemicals (continued)

Table 2

DOH–OSPI list of chemicals appropriate only for advanced level high school science classes due to high risk and limited to small or micro scale quantities

Chemical Name	Hazards
Acetamide	Carcinogen, P-Listed
Aluminum Chloride, anhydrous	Water reactive, corrosive
Ammonium Nitrate	Powerful oxidizer, reactive
Ammonium Perchlorate	Explosive; highly reactive
Ammonium Sulfide	Poison, corrosive, reacts with water and acids
Barium Peroxide	Fire and explosion risk with organic materials, oxidizer, toxic
Bromine	Corrosive, oxidizer, volatile liquid
Butyric Acid	Corrosive, intense stench
Cadmium sulfide	Highly toxic, carcinogen
Calcium Carbide	Flammable, reacts with water.
Chromium Trioxide	Oxidizer, poison
Dichlorobenzene	Toxic, also known as "Moth Balls"
Ethidium Bromide	Potent mutagen
Ether, Ethyl	Flammable, peroxide former, 6-month shelf-life max.
Hexamethylenediamine	Corrosive, absorbs through skin, lachrymator
Hexanediamine, 1-6	Corrosive, absorbs through skin, lachrymator
Hydrobromic Acid	Corrosive, poison
Hydrofluoric Acid	Corrosive, poison
Hydrogen Peroxide, greater than 29%	Powerful oxidizer, corrosive to skin
Lead compounds	Highly toxic
Lead Nitrate	Toxic heavy metal, oxidizer
Magnesium, powder	Flammable
Mercury, liquid	Toxic heavy metal, carcinogen – not a reagent
Mercury Thermometers	Toxic heavy metal, carcinogen – not a reagent
Phenol	Poison
Phosphorus, Red	Flammable solid, very small quantities only
Potassium Chlorate	Powerful oxidizer, reactive
Potassium Perchlorate	Powerful oxidizer, reactivity hazard
Radioactive Materials	Radioactive
Sebacoyl Chloride	Corrosive fumes, lachrymator
Silver compounds	Toxic
Silver Oxide	Poison
Sodium Chlorate	Powerful oxidizer
Sodium Dichromate	Reactive, may cause fire and explosion
Sodium metal lump	Water reactive, ignites spontaneously in dry hot air

Appendix D
Science Laboratory Chemicals (continued)

Table 2 (continued)

DOH–OSPI list of chemicals appropriate only for advanced level high school science classes due to high risk and limited to small or micro scale quantities

Chemical Name	Hazards
Sodium, metal, small chips	Water reactive, corrosive
Sodium Peroxide	Water reactive; may cause fire & explosion
Sodium Sulfide	Fire and explosion risk
Strontium Nitrate	Oxidizer, may explode when heated or shocked
Thermite	Flammable solid, small quantities
Toluene	Flammable, dangerous fire risk, toxic
Uranium/Uranyl Compounds	Radioactive
Wood's Metal	Poison
Xylene	Flammable, toxic

Appendix E
Arts and Crafts

PAINTING

Making Paints	Dusts with heavy and radioactive metals. Solvents especially Toluene. Driers, preservatives, and binders, possibly including Pb, Mn, and Co. SHOULD NOT BE DONE IN SCHOOLS.
Oil, Acrylic, and Epoxy Painting	Toxic pigments, especially lead, arsenic, chromate, and cadmium. Solvent exposure, especially Toluene. With epoxy resins, hypersensitivity reactions are a danger. (Note: old pastels may contain asbestos-laden French Talc.)
Spray Painting	Inhalation of solvents and toxic pigments.
Clean-up	Solvent exposures.

PRINT MAKING

Silk-screening with Oil-Based Inks	Exposure to solvents especially in the printing and drying process. Toxic solvents (lacquer solvents and toluene) and isophorone are particular hazards. It is safer to use water-based inks.
Clean-up of Silk Screening Process	Exposure to solvents. Safer to use disposable stencils and other materials.
Lithography	Possible exposure to Lampblack, a carcinogen. Solvent exposure. Metal fumes and gasses from photolithography.
Intaglio	Risk of injury from sharp tools. Solvent exposure, possible methyl chloroform.
Acid Etching (Nitric or Hydrochloric Acid)	Exposure to asphaltum (carcinogenic). K Chlorate (explosive) and C1 gas from Dutch mordant. H_2 gas and NO_x gasses releases in acid etching.
Relief Printing	Risk of injury from sharp tools. Skin irritants from exotic woods. Glue solvents, dusts, and fixatives in collograph making.

CERAMICS, JEWELRY, AND ENAMELING

Clays and Talcs	Silica and asbestos (especially Tremolite) in dried clay residues, allergenic molds in old moist clay.

Kick Wheels	Injury risk.
Glaze Preparation	Exposure to powders of highly toxic heavy metals. INAPPROPRIATE IN SCHOOLS.
	Exposure to heavy metal pigments especially lead, cadmium, chrome, antimony, vanadium, nickel, and possibly uranium oxide in old compounds. Frittered leads are still hazardous to use in the glazing and firing processes.
Kiln Firing	Exposure to heavy metal fumes (especially Pb as it vaporizes at low temperature) and poisonous gases (e.g. Cl, Fl, SO_2, NO_x, O_3) from unventilated processes. Accumulation of heavy metal fume residue from over-night or weekend firing. Burns, heat exposure, and infrared radiation hazards.
Use of Pottery as Foodservice Utensils	The safety of final products using frittered lead glazes depends on the quality control in the firing process and on the type of kiln used. In small electric kilns often used by schools, frittered leads should be expected to vaporize and re-precipitate on pottery in a dangerous, soluble form.

SCULPTURE

Plastics	Formaldehyde, phenol, carbon monoxide, and hydrogen cyanide exposure from work with amino and phenolic resins. Skin and respiratory irritants and allergens with epoxy resins. Methyl methacrylate monomer (irritant and narcotic), benzoyl peroxide (flammable and explosive), acrylic polymer dust (sensitizer) are hazards with acrylic resins. Styrene (highly toxic narcotic, neurotoxin, and internal organ risk), cobalt naphthalenic, dimethylanilane (causes methemoglobinemia), fiberglass, and solvents are potential hazards in work with polyester resins. Work with polyurethane resins may cause exposure to diisocyanates (TDI, MDI), toxic amines, organotin compounds, fluorocarbon blowing agents (cardiotoxic). Heating polyurethane may produce carbon monoxide, nitrogen oxides, acrolein, and hydrogen cyanide. Work with silicones and natural rubbers may cause exposure to acetic acid, methanol, methylene chloride, and flammable and explosive peroxides and hexane. Work with finished plastics may cause exposure to plastic dusts, some of which are irritants or allergens. Heat decomposition of molding pellets and other plastics may produce carbon monoxide, nitrogen oxides, hydrogen cyanide, plastic monomers, monomer methyl methacrylate, hydrogen chloride gas, and toxic polyfluorocarbon decomposition products. Toxic solvents including methylene chloride may be encountered in many processes.

Plaster	Plaster dust and additives (Potassium sulfate, potassium alum, borax, acetic acid, burnt lime). Physical hazards in modeling or carving. Powdered pigments, acrylics, and lacquer solvents in finishing processes.
Wax	Flammable wax vapors, acrolein fumes, decomposition products from heating wax. Solvent exposures (including CC1, in some applications). Chlorinated synthetic waxes (with PCB's) may be found in old materials.
Stone	Physical hazards, silica, and asbestos in some applications.
Wood	Allergenic and irritating saps and wood dusts. Carcinogenic wood dust exposure (requires chronic exposures). Highly toxic wood dusts (e.g. giant sequoia, cork oak, some maple woods, and redwood). Glues and solvents.

PHOTOLABS

Black and White	Inhalation of chemical fumes and contact with eyes or skin are primary hazards. Exposures to mono-methyl-p-aminopheno sulfate, paraphenlylene diamine, hydroquinone, sodium hydroxide, sodium carbonate, potassium bromide, sodium sulfite are possible in developers. Acetic acid, especially prior to dilution is the primary hazard with stop baths. Potassium chrome alum is another possible exposure. Mixing the sodium sulfite in the fixing bath with the acetic acid in the stop bath can produce sulfur dioxide gas. Other mixture hazards exist with intensifying and reducing compounds. Intensifiers, reducers, and toners can be HIGHLY toxic and include cyanide compounds, chromates, and toxic metals among other chemicals.
Color	In addition to chemicals used in Black and White photography, color photography involves the use of other hazardous chemicals (e.g. the cellusolves, ethylene glycol, and tertiary-butylamine borane).

MISCELLANEOUS CRAFTS

Fiber Arts—Vegetable Fibers (e.g., jute, sisal, cotton)	Fiber dusts and molds may cause acute or chronic pulmonary illnesses.
Fiber Arts—Animal Fibers (e.g., wool)	Anthrax from imported wool or hair.

Appendix E
Arts and Crafts (continued)

Dyeing Fabrics	Skin contact and inhalation of dyes which are allergenic, irritating, or otherwise toxic is the primary hazard.
Leather Craft	Physical hazards, leather dusts (a possible carcinogen with chronic exposure), and solvents from leather cementing are the primary hazards.
Bone and Shell Materials	Physical hazards. Irritants, allergens, and pathogens from bone and shell dusts.
Stained Glass	Physical hazards. Possible exposures during glass decoration: metallic oxides, enamels, silver nitrate, hydrofluoric acid, and wax vapors. Glazing hazards: Pb dust and fumes, Zn chloride. Antiquing hazards: antimony sulfide, copper sulfate, and selenium dioxide.
METALWORK	
Welding	Fire/explosion hazards, hot metal and sparks, ultraviolet light, infrared radiation, poisonous gases (CO, NO_x, O_3), toxic fumes (F, Cu, Zn, Fe, Ni, Mg, Mn, Pb, Cd, Cr, Ni, Be).
Brazing	Fire/explosion hazards, hot metal, flame, infrared radiation, fluoride flux fumes, and metal fumes (Cd, Pb, and Zn).
Metal Casting	Molding hazards; formaldehyde, silica, asbestos, bone dusts, sodium silicate, and ethyl silicate and wax fumes (in lost wax process). Pouring hazards: CO, metal oxides (Pb, Ni, Zn), hydrogen cyanide (in lost Styrofoam process), molten metal, heat, and infrared radiation.
Forging, Metalwork Fabrication	Sharps, noise, heat, CO gas, infrared, hot objects, flame, fire/explosion hazards, H_2SO_4 (IN CLEANING SURFACES).
Surface Treatment	Pitch (with Benzo-a-Pyrene), benzene, fire hazards, sharps.
Etching, Photo Engraving	Strong acids and acid gases (e.g. nitric acid), methyl cellulose acetate, and xylene. Carbon arc hazards: NO_x, O_3, other poisonous gases, ultraviolet radiation.
Electroplating and Electroforming	Electric currents, caustic soda, sulfuric acid, cyanide, lacquer vapors.
Chemical Coloring	Toxic coloring agents (e.g. Pb Acetate, Iodine, Barium Sulfide). Flammables, solvents, and lacquer vapors.
Niello	Pb fumes and Pb sulfide dusts.

Appendix E
Arts and Crafts (continued)

Gilding	Mercury exposure.
Cleaning, Polishing, Finishing	Pickling hazards: Strong acids, Na Bisulfate, K dichromate. Sandblasting: Silica. Grinding, sanding, and filing: metal particles, toxic metal dusts (e.g. Pb), grinding wheel dusts and fumes (e.g. silica, formaldehyde, irritants, and allergens).

DRAWING AND PAPER CONSTRUCTION

Chalk Drawings	Methylene chloride in the spray fixatives.
Glue Application	Toluene and Xylene exposure from rubber cement and other solvent-based glues. Allergens and solvents from epoxy adhesives. Isocyanates in polyurethane adhesives. Physical hazards from cyanoacrylate instant glues.
Markers	Xylene and toluene exposures from permanent markers and dry erase (white board) markers.

[1] Source: McCann M: **Artist Beware: The Hazards and Precautions in Working with Art and Craft Materials.** Watson-Guptill Publications. New York, 1979. [2] These potential hazards exist for only some of the processes used. The potential hazards are not a comprehensive listing, but provide important examples.

Appendix F
Animals in the Classroom

The purpose of these guidelines is to provide information that will promote health and safety for staff and students when animals are brought into the classroom. Many times inadequate understanding of animal disease and behavior can lead to unnecessary risks for the students, teachers, staff, and animals. These guidelines are designed to promote a better understanding of:

1. Animals that are not safe to bring into classroom situations.
2. Safety precautions for animals which have the potential to transmit disease to children.
3. Safety precautions for introducing animals into classroom situations.
4. How to properly handle animal wastes to limit the spread of disease from animals to children.

I. Animals Which Are UNACCEPTABLE for Schools

A. Wild Animals. Wild animals pose a risk for transmitting rabies as well as other zoonotic diseases (diseases which can be transferred from animals to man) and, therefore, should not be brought to schools or handled by children. The behavior of wild animals also tends to be unpredictable.

Exceptions to this recommendation include those instances when wild animals are presented at schools by professionals who have experience handling wildlife, or the animals are displayed in enclosed cages which prevent contact between the animal and the children. Because of the high incidence of rabies in bats, raccoons, skunks, and wild carnivores, these animals should not be permitted on school grounds under any circumstances (including recently killed animals).

B. Poisonous Animals. Spiders, venomous insects, poisonous snakes, reptiles, and lizards should be prohibited from being brought onto school grounds.

Exceptions to this recommendation include those instances when such animals are presented at schools by professionals who have experience handling such animals, or the animals are displayed in cases which provide a physical barrier between the animal and the children (e.g., animal is enclosed behind sturdy glass or plastic).

C. Wolf-Hybrids. These animals are crosses between a wolf and a dog and have shown a propensity for aggression, especially toward young children. Therefore, they should not be allowed on school grounds.

D. Stray Animals. Stray animals should never be brought onto school campuses because the health and vaccination status of these animals is seldom known.

E. Baby Chicks and Ducks. Baby chicks and ducks are inappropriate in schools due to the high risk of salmonellosis and campylobacteriosis.

F. Aggressive Animals. Animals which are bred or trained to demonstrate aggression toward humans and/or animals or animals which have demonstrated similar aggression in the past should not be permitted on school grounds. Aggressive, unprovoked, or threatening behavior mandates an animal's immediate removal.

Exceptions may be sentry or canine corps dogs for demonstration that are under the control of trained military or law enforcement officials.

II. General Guidelines for Animals in Schools

It is important that animals which are brought onto school campuses be clean and healthy so that the risk of their transmitting diseases to students is minimal. Children tend to be more susceptible to zoonotic diseases and parasites than adults due to a lack of hand washing and the tendency of young children to put their hands in their mouths. Therefore, animals that are handled should be well groomed and free of internal parasites, disease, etc., to decrease the likelihood of the animal transmitting these vectors to the students. Visiting animals should be restricted to an area designated by the principal or administrator. Kittens and puppies may only be appropriate for short classroom visits.

A. Verified Rabies Vaccination. Evidence of current rabies vaccination is required for all dogs, cats, and ferrets which are brought onto school property for instructional purposes. Dogs and cats under three months of age and not vaccinated against rabies should not be handled by children.

B. Health Certificates for Dogs. A health certificate signed by a licensed veterinarian is required, showing proof of current vaccination against canine distemper, hepatitis, leptospirosis, parainfluenza, parvovirus, bordetella, and rabies. Animals must have had a negative fecal exam for internal parasites within the past six months. The animal should be free of external parasites such as fleas, ticks, and mites. Dogs over four months of age should be housebroken. Younger animals should be approved by the principal or administrator before visiting.

C. Health Certificates for Cats. A health certificate signed by a licensed veterinarian is required, showing proof of current vaccination against feline panleukopenia, rhinotracheitis, calicivirus, feline leukemia, and rabies. Cats should be free of external parasites such as fleas, ticks, and mites.

III. Proper Restraint of Animals

Because animals may react strangely to classroom situations, it is important to have an effective way to control them. Fear may cause an animal to attempt to escape or even act

aggressively in situations which are unusual to them. Appropriate restraint devices will allow the holder to react quickly and prevent harm to the students or escape of the animal.

A. **Collars and Leashes.** Dogs, cats, and ferrets should have a proper collar, harness, and/or leash as appropriate when on school grounds or in the classroom so that they can be easily controlled. Household rope or string is not considered an appropriate restraint. The owner or person responsible for the animal should stay with the animal during its visit to the school. No animal should be allowed to roam unrestrained on the school campus or in the classroom.

B. **Pet Birds.** Pet birds should never be allowed to fly free in a classroom.

C. **Designated Areas.** All animals should be restricted to the area designated by the principal or administrator. Animals may be allowed in school cafeterias at times other than during meals when:

1. Effective partitioning or self-closing doors separate the area from food storage or food preparation areas.
2. Condiments, equipment, and utensils are stored in enclosed cabinets or removed from the area when animals are present.
3. Dining areas, including tables, countertops, and similar surfaces, are effectively cleaned before the next meal service.

D. **Estrus.** Dogs and cats should be determined not to be in estrus ("heat") at the time of the visit.

IV. Special Conditions for Specific Animals

Specific recommendations should be observed for the following animals because of zoonotic diseases that they can carry or because of certain tendencies:

A. **Parrots, Parakeets, Budgies, and Cockatiels.** Because these birds can carry zoonotic diseases such as psittacosis, they should not be handled by children. Birds showing any signs of illness should not be brought to the school. Birds may be brought to school as long as their cages are clean and their wastes can be contained, such as within a cage. Birds permanently housed on school property in cages should be treated prophylactically for psittacosis 45 days prior to entering the premises.

B. **Ferrets.** Ferrets can be allowed to visit school classrooms, but they must be handled by the person responsible for them. Children should not be allowed to hold ferrets due to the animal's propensity to bite when startled

C. **Reptiles and Amphibians.** Because all reptiles and amphibians can carry salmonellosis, even when reared as pets or for display, special precautions should be instituted when school children handle them. School children under 12 years of age should be prohibited from handling reptiles and amphibians. No turtles with a carapace length less than four inches are allowed in schools. Any child handling a reptile or amphibian should be instructed to wash his/her hands thoroughly afterwards.

D. **Fish**. Disposable gloves should be worn when cleaning aquariums. Used tank water should be disposed of in sinks that are not used for food preparation or for obtaining water for human consumption.

E **Guide, Hearing, and other Service Dogs and Law Enforcement Animals.** These animals should not be prohibited from being on school grounds or in classroom situations.

V. Student Contact With Animals

Even very tame animals may react aggressively in strange situations; therefore, student contact with animals should always be supervised and regulated by a few basic rules.

A. Because increased activity and sudden movements can make animals feel threatened, all student contact with animals should be highly organized and supervised. Animal bites can usually be avoided if students are kept in small groups, and rough play or teasing of animals should not be allowed.

B. It is recommended that children not be allowed to feed pets directly from their hands.

C. Small animals such as rabbits, hamsters, gerbils, and mice should be handled with leather gloves whenever possible. Rabbits do not like to be held and will struggle to free themselves.

D. Children should be discouraged from "kissing" animals or having them in close contact with their faces. This statement is especially true for reptiles and amphibians.

E. Education with animals should be used to reemphasize proper hygiene and hand washing recommendations. All children who handle animals should wash their hands immediately after handling them.

F. Animals should not be allowed in the vicinity of sinks where children wash their hands; in any area where food is prepared, stored, or served; or in areas used for the

cleaning or storage of food utensils or dishes. Animals should also be restricted from nursing stations or sterile and clean supply rooms. Do not allow cats or dogs in sand boxes where children play.

G. Immunocompromised students may be especially susceptible to zoonotic diseases; therefore, special precautions may be needed to minimize the risk of disease transmission to these students. Consultation with the child's parents about precautionary measures is strongly advised. Recommendations for specific precautionary measures may also be solicited from the Washington State Department of Health Zoonotic Disease Program.

VI. Handling and Disposal of Animal Wastes While on School Campuses

A. Clean Up of Animal Wastes. Children should not be allowed to handle or clean up any form of animal waste (feces, urine, blood, etc.). Animal wastes should be disposed of where children cannot come in contact with them such as in a plastic bag or container with a lid or via the sewage system for feces. Food handlers should not be involved in the cleanup of animal waste.

B. Prohibited Areas. Animal wastes should not be disposed of, and visiting animals should not be allowed to defecate in or near areas where children routinely play or congregate (i.e., sandboxes, school playgrounds, etc.).

C. Litter Boxes. Litter boxes for visiting animals should not be allowed in classrooms.

Sources: *Alabama State Department of Public Health*
Washington State Department of Public Health
Washington State Department of Agriculture

Appendix G
Who's Who in School Environmental Health

The following professionals and agencies are concerned with school health and safety:

Environmental Health Specialists:
The environmental health specialist is the health professional that represents the local health officer.

Risk Managers and Safety Officers:
The risk manager is the safety officer at the educational service districts and larger school districts and is primarily responsible for the prevention and management of insurance claims and assuring compliance with safety requirements. The risk manager, or a school safety officer, is usually the environmental health practitioner's primary safety contact with the school district.

Local Health Department:
The local health department is the agency that carries out the mission of the local health officer as defined in RCW 70.05.070.

School District Board of Directors:
Elected members of the community who determine and adopt written policies for the development and implementation of programs, activities, services, or practices within the district.

Office of Environmental Health and Safety, Department of Health:
This office, among other duties, is responsible for carrying out the powers and duties of the Secretary of the Department of Health (RCW 43.70) in relation to environmental health in schools. These functions include guidelines and regulations development, technical consultation, training, evaluation, and investigation.

State Board of Education:
The State Board of Education is composed of officials elected by school district board members. The Board's responsibilities range from establishing minimum standards for education and certification to controlling the appropriation of funds for construction projects. See RCW 28A.04.

Superintendent of Public Instruction:
Under RCW 28A.03, the Superintendent of Public Instruction has many responsibilities including "supervision over all matters pertaining to public schools in the state."

Office of Superintendent of Public Instruction:
This agency carries out the powers and duties of the Superintendent of Public Instruction.

Educational Service Districts (ESDs)
Under RCW 28A.21, ESDs were created to: provide cooperative and informal services to local school districts; assist the Superintendent of Public Instruction and the State Board of

Education; and provide services to school districts to assure equal educational opportunity. They often consolidate certain administrative services with a number of school districts reducing duplication and saving costs. Risk management and insurance services are often housed in ESDs.

School Nurses:
School nurses are health professionals employed by school districts. Historically, school nursing was a health department function. They provide clinical services and numerous health screening and health education services to students. School nurses are the most likely to recognize outbreaks and clusters of environmentally associated disease, and they tend to view environmental hazards from a public health point of view. It is recommended that school nurses receive copies of inspection reports when possible.

School Facilities Advisory Board (SFAB):
This board provides guidance to the Superintendent of Public Instruction and the State Board of Education on school construction issues. Its members represent a broad spectrum of public and private sector interests.

Department of Labor and Industries (L&I):
The Industrial Safety and Health Division (WISHA) of the Department of Labor and Industries is responsible for enforcing the Washington Industrial Safety and Health Act. These are the occupational standards designed to protect all employees. The enforcement of these standards also indirectly benefits children in schools. The WISHA division is divided into two sections: voluntary services and compliance.

Department of Labor and Industries Consultant:
Schools can request the assistance of consultants without fear of an enforcement action. Labor and Industries consultants are usually willing to discuss health and safety issues with local health officials, although their focus is on the employees, not the students. Labor and Industries Services are divided into six regions and 21 offices located throughout the state.

Department of Labor and Industries Compliance Inspector:
A compliance inspector conducts routine or complaint inspections to enforce WISHA standards. Numerous sanctions can be levied against violators.

Department of Ecology (DOE):
DOE has rules regarding hazardous waste disposal.

Local Fire Marshal:
The local fire marshal is usually responsible for inspecting facilities for compliance with the state and local fire codes. New plans may be reviewed by the fire marshal and/or the building official, depending on the jurisdiction.

State Building Code Council (SBCC):
The SBCC assures that the State Building Code Act is implemented. It is responsible for the review, revision, and development of the State Building Code. The State Building Code (RCW 19.27 and WAC 248-51) includes the fire, energy, building, plumbing, electrical, water conservation, ventilation and indoor air quality, and mechanical codes. The SBCC is good source for information on any building-related code.

Washington State Association of School Business Officials (WASBO):
WASBO is the professional association for risk managers and other school business officials.

School Nurse Organization of Washington (SNOW):
SNOW is the professional association that serves school nurses.

Washington Association of School Administrators (WASA):
WASA is the professional association for school administrators (typically superintendents and assistant superintendents).

Washington State School Directors' Association (WSSDA):
WSSDA is the association serving school board members.

Association of Washington School Principals (AWSP):
AWSP is the association serving school principals and vice principals.

Washington Association of Maintenance and Operations Administrators (WAMOA):
WAMOA is the professional association for school facility directors and maintenance supervisors.

Washington Education Association (WEA):
WEA represents the public school teachers in Washington.

Washington State PTA:

The PTA represents the students and their parents.

Appendix H
Questions and Answers About School Health and Safety

Q. Is the school program a new responsibility imposed by the State Board of Health on local jurisdictions?

A. **No.** The State Board of Health regulations that govern environmental hazards in schools date back to 1955. The health officer's role in regulating the child's environment is similar to the role in foodservice establishments and water recreation facilities, except that schools are not required to have permits and cannot be closed unless by the health officer in case of an imminent danger or other emergency.

Q. What are the responsibilities of the local health officer?

A. WAC 246-366 requires the health officer to review new construction sites, review plans for new construction and modernization, conduct pre-occupancy inspections, and perform routine inspections of schools. All of these responsibilities require the health officer to provide notifications of requirements and recommendations.

Q. What is the difference between requirements and recommendations?

A. Regulations that are explicitly stated in the language of WAC 246-366 are required. Guidelines (including those cited by Section 140-Safety) are recommendations. Regulations can be enforced, recommendations cannot.

Q. Do requirements impact child health more then recommendations?

A. **No.** The recommendations are intended to address the higher risk health issues in many cases.

Q. Are the regulations enforceable?

A. **Yes.** Under the Revised Code of Washington, both the local health officer and the State Secretary of Health have the authority to enforce any rules and regulations of the State Board of Health that are codified as Chapters of the Washington Administrative Code (WAC). However, there are no mechanisms provided in the WAC for administrative enforcement (e.g., fines, closures, etc.), therefore a civil action must be filed in court to enforce the school regulations. Consequently, enforcement action is rare. The local health officer may call upon the secretary to assist with such an action if needed.

Q. Are the recommendations enforceable?

A. **Yes and No**. Non-mandated recommendations are not enforceable. Requirements that are codified are enforceable, but the appropriate enforcement authority may not be the health agency. These include the requirements cited in WAC 246-366-140.

Q. What are the primary responsibilities of the local health officer?

A. WAC 246-366 requires the local health officer to review new construction sites, review plans for new construction and remodeling, conduct pre-occupancy inspections and perform routine inspections of all K–12 public and private schools. For routine inspections, the regulations direct the health officer to review the high-risk environments (e.g., shops, science labs, playgrounds, PE, art, etc.). After the routine inspection, the health officer is to forward a copy of the findings to the Board of Education.

Q. Are children protected by occupational standards that cover the teachers?

A. **No.** Occupational standards (WAC 296-62,64) apply to the employer-adult employee relationship and address the range of work activities to which adults are typically exposed. School children are not in an employer-employee relationship legally rendering the occupational standards inapplicable and often irrelevant. Environmental health objectives to assure a healthy learning environment are different than those designed to assure a healthy working environment. Many of their important exposures occur in the context of play and recreation. Where many of the concepts in occupational standards are transferable (i.e., science and vocational instruction), the actual standards are sometimes inadequate or inappropriate. Occupational standards were developed exclusively to protect the physically, mentally, and socially mature adult. Pediatric environmental health must serve as the basis for health officer involvement.

Q. What is meant by pediatric environmental health?

A. Pediatric environmental health evaluates physical, chemical, and biological exposures in light of the developmental characteristics of children. These characteristics include competencies (physical dimensions, capabilities, body system development), motivation (why children interact with their environment), and temperament (intensity of interaction with the environment).

Q. What is the role of the health officer in relationship to the Department of Labor and Industries (L&I)?

A. The local health officer is responsible for the public health surveillance of environmental hazards which affect children in school, a learning and recreational environment. L&I is responsible for enforcing occupational hygiene and safety standards to protect adult employees in the working environment including schools. With the exception of the electrical code and classroom portables, this agency has no plan review function. L&I performs a valuable consulting service in industrial hygiene and safety. Schools often use this service. Local health officials should work closely with local L&I consultants in a cooperative relationship. Many of the activities of L&I help to protect children's health.

Q. What is the role of the health officer relative to the fire marshal?

A. The state fire code, as enforced by the local fire marshal, addresses fire safety items in greater detail than the health department guidelines and with more statutory authority. Fire safety items in the health department guidelines may be deferred to the fire marshal to reduce duplication of services. (Issues not relating to fire and explosion such as protecting children from acute poisoning and chronic toxicity are usually health department matters.)

Q. What is the role of the health officer relative to the building department?

A. The building official reviews plans for new construction for compliance with applicable building, mechanical, and life safety codes. To determine what is appropriate in each jurisdiction, it is necessary for the health agency and local building department personnel to know what each other's capabilities and constraints are. The health officer should initiate communication with the building department in this regard.

Q. How is the plan review function of the health officer unique?

A. The health officer's plan review function heavily emphasizes recommendations rather than requirements. To be effective, very early involvement in the planning process is required. Also, some of the new construction activities that should involve a health officer's plan review do not require a permit from the local building department. Finally, many items in the health regulations apply to existing facilities and practices as well as new construction.

Q. When is site approval required?

A. Site approval is required whenever plan review is required. Automatic approval can be granted if all of the following conditions are met: no new property is being developed; no buildings are being converted to use for school instruction; no new area of existing property will be covered by a new building, portable, or building expansion; and no significant increases in occupancy are being proposed.

Q. When is plan review required by the health official?

A. Plan review is required for new school construction and modernization of existing facilities. For portables, alternative methods are available to satisfy the plan review requirement.

Q. How is the health officer's inspection function unique?

A. The primary focus of a health and safety inspection is education and recommendation. There are no sanctions for a routine enforcement program. Effectiveness depends on the mandated direct communication with the school district board of directors.

Q How often should school inspections be done by the health official?

A. Previous board of health rules required annual inspections; however subsequent amendments were made to require them on a "periodic" basis. The health officer is responsible for scheduling and conducting the inspections. The intent of the law is that inspections be scheduled often enough to assure that hazards are identified and children's health is protected.

As working relationships become more coordinated and cooperative with school districts, the frequency may be reduced to every second then every third year, with follow-up inspections and well-documented self-inspections filling in between. It is very important that there be documentation of the school districts' correction of problems from year to year also. If very few or no problems are found after several routine inspections, the health officer may elect to reduce the frequency even further, however, the state school steering committee generally agreed that schools should have a complete inspection by the health department at least every five years. The health officer may elect to maintain or increase inspection frequency when reported problems continue unabated.

Appendix I
Safety and Health Websites

Government Websites:

Bureau of Labor Statistics	http://stats.bls.gov/
Centers for Disease Control and Prevention	www.cdc.gov
Consumer Product Safety Commission	www.cpsc.gov
Environmental Protection Agency	www.epa.gov
Federal Emergency Management Agency	www.fema.gov
Food and Drug Administration	www.fda.gov
Mine Safety and Health Administration	www.msha.gov
National Cancer Institute	www.nci.nih.gov
National Institute of Health	www.nih.gov
NIOSH	www.cdc.gov/niosh/homepage.html
National Weather Service—West. Reg.	www.wrh.noaa.gov
OSHA	www.osha.gov
US Dept of Health and Human Services	www.os.dhhs.gov
US Dept. of Transportation	www.dot.gov
US Fire Administration	www.usfa.fema.gov
US Government Printing Office	www.access.gpo.gov

Washington State

Wash. State Dept of Ecology	www.wa.gov/ecology
Wash. State Dept of Health	www.doh.wa.gov
Wash. State Dept of Labor & Industries	www.wa.gov/lni

Organizations

Advocates for Highway and Auto Safety	www.saferoads.org
American Conf. of Gov. Industrial Hygienists	www.acgih.org
American Industrial Hygiene Association	www.aiha.org
American Lung Association	www.lungusa.org
American National Standards Institute	www.ansi.org
American Red Cross	www.redcross.org
ASSE	www.asse.org
Center for Safety in the Arts	www.artswire.org
Human Factors and Ergonomics Society	www.hfes.org
Illuminating Engineering Society of N. America	www.iesna.org/
Industrial Safety Equipment Assoc.	www.safetycentral.org
Insurance Institutes for Highway Safety	www.hwysafety.org
National Air Duct Cleaners Association	www.nadca.com/
National School Board Association	www.keepschoolssafe.org
Mayo Clinic (offers weekly newsletter)	www.mayohealth.org
National Fire Protection Agency	www.nfpa.org
National Safety Council	www.nsc.org

Appendix I
Safety and Health Websites (continued)

General Information Sources	
Associated Industries of the Inland NW	www.aiin.com
General Information Sources (continued)	
The Federal Register	http://fr.cos.com/
Fremont Compensation Insurance Group	www.fremont.com
Lighting Design Lag	www.northwestlighting.com
Material Safety Data Sheets (accesses MSDS data from Cornell Univ.)	www.msds.pdc.cornell.edu/msdssrch.asp
Lighting	www.lightingresource.com
Professional Development Associates	www.pdanet.com
Safety Online	www.safetyonline.net
"Safety Currents" (weekly newsletter)	www.safetyonline.net/currents/home.htm
"Safety on the Internet"—book	www.govinst.com
Traffic Safety Village	www.drivers.com
World Safety (monthly newsletter)	www.worldsafety.com
Safety Vendors	
Oxarc	www.oxarc.com
Cole-Parmer Instruments Co.	www.coleparmer.com
Grainger	www.grainger.com
Lab Safety	www.labsafety.com
SKC, Inc.	www.skcinc.com
Masune 1st Aid & Safety	www.masune.com
Moore Medical Corp.	www.mooremedical.com
Hach	www.hach.com
JJ Keller	www.jjkeller.com
Quest Technologies	www.quest-technologies.com
Coastal Safety and Environmental	www.coastal.com
Mitchell Instruments	www.mitchellinstrument.com
The Safety Zone	www.safety-zone.com

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Past President, Inland Northwest Chapter ASSE

Appendix J
Selected Bibliography

Noise And Vibration Control
Edited by Leo L. Beranek
Library of Congress # 78-148977
ISBN 07-004841-X
Published by McGraw Hill, Inc.

Artist Beware
By Michael McCann, Ph.D.
Watson-Guptill Publications, N.Y.
1515 Broadway
New York, NY 10036
Library of Congress
RC963.6.A78M32 702.B 79.18982
ISBN 0-8230-0295-0

Injury In America
National Academy Press
2101 Constitution Avenue, NW
Washington, D.C. 20418
Library of Congress # 85-60999
ISBN 0-309-03545-7

Washington Education Directory
Barbara Krohn and Associates
835 Securities Building
Seattle, WA 98101
(206) 622-3538

Noise and Noise Control
Malcolm J. Crocker/Frederick M. Kessler
CRC Press, Inc.
2000 Corporate Blvd., NW
Boca Raton, FL 33431
Library of Congress # 75-2352
ISBN#0-8493-5093-0 (Vol. 1)
0-81819-064-3

The Science Instructor's Safer Source
ChemicalCatalog/Reference Manual
By Flinn Scientific, Inc.
P.O. Box 2A, 917 W. Wilson Street
Batavia, IL 60510
(312) 879-6900

Hazards in the Chemical Laboratory
Edited by L. Bretherick
ISBN 085186 4198
Published by The Royal Society of
Chemistry
Blackhorse Road
Letchworth, Herts, SG6 1Hn, ENGLAND

Prudent Practices for Disposal of
Chemicals From Laboratories
National Academy Press
2101 Constitution Avenue, NW
Washington, D.C. 20418
Library of Congress #
ISBN 0-309-03390-X

Health Hazards in Arts and Crafts
Society for Occupational &
Environmental Health
1341 G Street, NW, Suite 308
Washington, D.C. 20005
Edited by Michael McCann, Ph.D., & Gail Barazani
Library of Congress # 80-52060
ISBN 0-931770-01-7

Industrial Ventilation—17th Edition
Committee on Industrial Ventilation
P.O. Box 16153
Lansing, MI 48901
Lithographed by
Edwards Brothers, Inc.
2500 South State Street
Ann Arbor, MI 48104
0-8493-5094-8 (Vol. 2)

Appendix J
Selected Bibliography (continued)

Health Hazards Manual for Artists
By Michael McCann
Nick Lyons Books
32 West 21st Street
New York, NY 10010
ISBN 0-941130-06-1

U.S. Dept of Health, Education & Welfare
HEW Pub No. (NIOSH) 76-162
Contract No. CDC-99-74-33
For Sale by Superintendent of Documents

U.S. Dept. of Health, Education and Welfare
Public Health Services
Center for Disease Control
National Institute for Occupational Safety and Health
Division of Physical Sciences and Engineering
Cincinnati, OH 45202

Industrial Noise Control—
Fundamental and Applications
By Lewis Bell
Library of Congress
ISBN 0-8247-1787-2
Published by
Marcel Dekker, Inc.
270 Madison Avenue
New York, NY 10016

School Indoor Air Quality
Best Management Practices Manual
Washington State Department of Health
PO Box 47825
Olympia, WA 98504
Available at: www.doh.wa.gov/ehp/ts/iaq/pdf

Safety Guide for Vocational, Trade & Industrial
and Technology Education
Office of Superintendent of Public Instruction
PO Box 48200
Olympia, WA 98504

Appendix K
Fee Guidelines

Public Health System Financing Principles:

"The history of public health financing in Washington State reflects a series of historical responses to specific situations in local communities and across the state rather than systematic development according to any established principles." This is a finding from a recent report completed by the University of Washington's Health Policy Analysis Program. The Finance and Governance Technical Advisory Committee has developed financing principles intended to serve long-term guidelines for state and local government to use in making decisions about how public health activities are financed.

The finance principles are designed to be general statements, which can be implemented through specific, short-term strategies. They cover issues of public benefit, incentives for building system efficiency, stability of financing, and equity of opportunity for basic public health protections. Three assumptions have served as philosophical underpinnings in the development of the principles: (1) State and local government have a shared responsibility along with the individual and the community in the protection and promotion of the public's health; (2) a well-functioning public health system requires an adequate base of support from state and local government; and (3) a fundamental level of capacity is needed throughout the state for carrying out the core public health functions.

In order to make best use of the resources available for strengthening the system, these principles should become the framework for guiding public health financing policy. To best understand their impact in guiding policy decisions, the financing principles should be considered as an interactive package of components, rather than as separate, isolated rules.

Financing Principles:

1. Public health activities vary along a continuum of benefit, from primarily benefiting individuals (e.g., reproductive health examinations, travel immunizations) to primarily benefiting communities (e.g., communicable disease investigation, health education campaigns). In some cases, public health activities have a population-based benefit while being directed at an individual or family (e.g., child abuse or domestic violence intervention, prenatal case management). The degree of benefit to the individual and the community, as well as whether the activity is conducive to fee collection, should all be considered in determining the financing of a public health activity (reference the Fee Principles for Local Health Jurisdictions).

    a. When an activity has primary benefit to an individual or an organization or protects the public from individual choices (e.g. on-site sewage permit, food handler's certification), a greater share of the cost should be passed on, through a fee or permit, to the individual or organization. There are circumstances where an individual cannot pay, and the fee should be subsidized.

b. When an activity has primary benefit to the community (e.g., early childhood immunizations, monitoring on-site system failure), a greater share of the cost should be publicly subsidized.

c. In the event that charging a fee jeopardizes community health status (e.g., HIV counseling/testing, on-site repair permit), the local health jurisdiction should have an established policy for fee waiver or adjustment. This in turn may require public subsidy of the activity.

2. When a public health activity has benefits to the population beyond the boundaries of the public health jurisdiction (e.g., response to a public health emergency, groundwater monitoring, INPHO), a regional financing scheme (e.g., funds, staff, resources, mutual aid agreements) involving state, local, and tribal governments should be developed.

3. The recipients of state public health financing should be accountable through performance-based contracts for:

   a. Establishing the capacity to perform core public health functions.

   b. Contrebutting to the improvement of community health status by impacting health risk and protective factors.

4. The state should provide start-up financial incentives to initiate the formation of long-term partnerships between local health jurisdictions, tribal governments, community based organizations, and other organizations, which will increase regional capacity and improve the overall efficiency and effectiveness of the public health system (reference the Public Health Partnership Principles).

5. The state will intercede when a local health jurisdiction has not independently attained the capacity required to perform the core public health functions and has not entered into a partnership as a means to improve performance. The state will charge back to local governments a share of the costs of carrying out the core public health functions in that community (reference RCW 43.70.130 and 70.05.130).

6. Both stability and flexibility are necessary for state and local government public health financing.

   a. Stable financing at an adequate level, which is both predictable and responsive to changes in the population, is required for carrying out the core public health functions.

b. Flexible financing, responsive to health assessment information including the degree and extent of public health threat, the effectiveness of prevention activities, and the community's priorities and values is required for public health activities which reflect policy choices of a community (e.g., anti-smoking education for youth, fluoridation of water supplies).

7. Additional state funding for local health jurisdictions shall not replace local government funding (reference RCW 43.70 58 and WAC 246.05.030).

8. The state's methods of distributing funds to local health jurisdictions should consider local government's ability to support the core public health functions, local population characteristics, service cost delivery factors, and the nature and extent of community health risk and protective factors.

Local Health Jurisdiction Fee Principles

The cost of protecting the public's health is supported by federal, state and local government, as well as direct charges to the consumer in the form of fees for services and permits. The revenue generated by fees is a legitimate and necessary component of the overall mix of public health financing. However, not all public health activities are conducive to fee collection. Some activities directly benefit an individual, while other activities have a combination of individual and community benefit.

Local government has authority for decisions about which services are supported by fee revenue and the level of that support. The Finance and Governance Technical Advisory Committee, as part of its study of public health system financing, recommends that local health jurisdictions have fee policies and practices that are consistent with the Fee Principles (listed below). These principles are intended to be a guide for public health administrators and board members in the process of determining fees for the activities of the local health jurisdiction.

Each local health jurisdiction should have a written fee policy that:

- Complies with RCW 70.05.060 (see attached)
- Describes a process of fee schedule development and frequency of review
- Describes a method for service cost calculation
- Describes a philosophy of service cost recovery
- Addresses the use of sliding fee scales
- Addresses fee collection practices

Prior to setting a fee, the service should be clearly defined, using standard definitions of practice when they exist. The actual cost of the service, including indirect cost, should be calculated using sound and consistent methodology.

Appendix K
Fee Guidelines (continued)

Fee schedules should be routinely reviewed and revised. Hourly rates should be established to cover services not specified by the fee schedule.

Cost recovery from fees can vary by service and should be consistent with the local health jurisdiction's philosophy of service cost recovery. The following factors should be considered in setting a service fee:

- If a service primarily benefits an individual or business, the cost recovery rate should be greater (e.g., on-site sewage permit, food handler's certification).
- If a service primarily benefits the population by protecting them from health problems or hazards, the cost recovery rate should be lower (e.g., childhood immunizations, on-site repair permit).
- It should be taken into account that a high rate of cost recovery, for some services, may significantly influence practices and behaviors which put the public at risk of health problems (e.g. temporary food service permit, HIV counseling/testing).

Local government should have the primary responsibility for subsidizing services which have less than 100 percent cost recovery from fees, except when grant funding is specified to support a service.